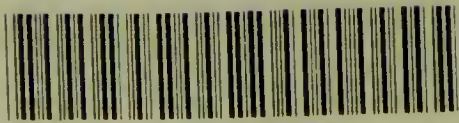


CASSELL'S
BOOK OF
BIRDS





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THE WHITE-TAILED EAGLE — *Haliaeetus albicollis*
(Common in the North)

CASSELL'S
BOOK OF BIRDS.

FROM THE TEXT OF DR. BREHM.

BY

THOMAS RYMER JONES, F.R.S.,

PROFESSOR OF NATURAL HISTORY AND COMPARATIVE ANATOMY IN KING'S COLLEGE, LONDON.

WITH UPWARDS OF

Four Hundred Engravings, and a Series of Coloured Plates.

IN FOUR VOLUMES.

VOL. II.

LONDON:
CASSELL, PETTER, AND GALPIN;
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CASSELL'S BOOK OF BIRDS.

CATCHERS (*Captantes*).—Continued.

THE HAWKS.

THE HAWKS (*Accipitres*) are a group of birds that rival the Falcons in rapacity, but are entirely without those qualities popularly supposed to lend a certain nobility to the murderous propensities of their more favoured relatives.

The HAWKS are recognisable by their compact body, long neck, and small head, their short rounded wings, very long tail, and high tarsi; the toes vary considerably in size. The beak is less vaulted and more compressed at its sides than in the Falcons; the tooth-like appendages are placed further back, and are less distinctly developed, and the bare circle around the eye is entirely wanting. The plumage is thick and soft, usually dark blueish grey above, and of a lighter shade upon the lower parts of the body, the latter being often darkly striped. Old birds of both sexes are alike in plumage, but the young differ considerably from their parents. The members of this family are found throughout the whole world, some species being confined to a comparatively limited extent of country, whilst others are to be met with everywhere. All frequent woods and forests, from whence they sally forth to find their food in the fields and valleys of the surrounding country. Hawks seldom fly to any great altitude; they move with great rapidity, altering their course at once with the utmost facility, and passing in and out among the branches and bushes with the dexterity of a Martin; they run swiftly upon the ground, assisting their progress with their wings. Their eyrie is usually built upon high trees, and is by some species prettily decked with green twigs, which are renewed from time to time. The eggs are numerous, and during the period of incubation the parent birds will fiercely attack even men should they attempt to molest the brood. Some few species have been trained for hunting purposes, but these attempts have almost always proved unsuccessful.

THE LAUGHING HAWK.

The LAUGHING HAWK (*Herpetotheres cachinnans*) is a South American bird, to which we have assigned the first place, inasmuch as in some respects it resembles the Falcons; the name it bears has been given to it on account of the very peculiar sound of its loud and resonant voice. Its distinguishing characteristics are its comparatively large head, which is profusely covered with feathers, and the robust development of the hinder parts of its body. The wings when closed reach to the middle of the tail, their primaries are narrow and pointed, the third and fourth quills being longer than the rest; the tail is long, the exterior feathers somewhat shortened; the tarsi are of moderate height

and strength, the toes small, and the claws remarkably short and thick; the beak is short, much compressed at its sides, and terminates in a short hook; the lower mandible is shallow, and bifurcated at its tip; the region of the eye is bare, and the body covered with long-pointed and strong-shafted feathers. In size the Laughing Hawk resembles its European congeners; the plumage is pale yellow from the top of the head to the nape, each feather having a black shaft; the bridles, nape, and cheeks are black, the mantle brown, the feathers being bordered with a lighter shade; the entire lower portion of the body and a stripe upon the neck are white, which changes into red upon the breast and legs; the upper part of the tail is black, its under portion whitish yellow, tipped with white and ornamented with six or seven grey stripes; the inner web of the brown quills which form the wings is shaded from reddish yellow to white, and edged with a delicate irregular brown line; the eye is reddish yellow, the beak black, the cere and legs are yellow.

THE DOUBLE-TOOTHED HAWK.

The DOUBLE-TOOTHED HAWK (*Harpagus bidentatus*) resembles the Falcons in its general form, but is recognisable by its comparatively small head, long broad tail, and short wings. The beak is very peculiar in its construction, the upper portion being excised immediately behind the hook at its tip, and the lower mandible, which terminates abruptly, has near its extremity two sharp teeth at each side; the third quill of the wings is longer than the rest, the tarsi are short, and of the same length as the toes. This bird, of which there are two species, is only found in South America.

The *Guaviao*, as the Double-toothed Hawk is called by the Brazilians, is thirteen and a half inches long and twenty-six inches broad; the wing measures eight inches, and the tail six inches. The plumage upon the upper part of the body is blackish grey, embellished with a metallic lustre; the under portions are reddish brown, with narrow white stripes upon the throat; the rump is also white, the quills of the wings are brown, ornamented with an irregular border, which is pure white upon the inner web; the tail is black above, brown beneath, and marked with three broad and crooked lines; the eye is light carmine, the cere greenish yellow, the beak blackish grey, and the feet of a beautiful reddish yellow. The plumage of the young is brown above and white beneath, delicately marked with undulating brown lines of various shades.

THE SPARROW HAWK.

The SPARROW HAWK (*Nisus communis*) is the European representative of a very numerous group distributed throughout the world. These birds (see Coloured Plate IX.) are distinguished by their elongated body, small head, and delicate beak, furnished with a very sharp hook at the extremity of the upper mandible; the wings are short, tail long, and short at its tip; the tarsi are high and weak, the toes long and slender, and armed with extremely sharp claws. The plumage varies but little in its colour. This species is about one foot long, and two broad; the wing measures seven inches and two-thirds, and the tail six inches; the female is about three inches longer and five inches broader than her mate. In the full-grown bird the entire upper portion of the body is blackish grey, the under parts are white, marked with undulating reddish brown lines; the shafts of the feathers are also of the latter hue, and brighter in colour in the male than in the female; the tail is tipped with white, and has five or six black stripes. In the young birds the upper portion of the body is a greyish brown, beneath the throat white, striped with brown; the belly and legs are ornamented with irregular spots, the beak is blue, the cere yellow, the iris golden yellow, and the feet pale yellow.

The Sparrow Hawk inhabits the whole of Europe and Central Asia; it is stationary in some



SHARP-SHINNED HAWK — *Accipiter velox*
The Sharp-shinned Hawk

parts of the latter continent, but migrates from Europe as winter approaches, and seeks a warmer climate in Northern Africa or India, appearing, according to Jerdon, in the latter country about the beginning of October, and leaving about February or March. This species makes its home principally in woodland districts, preferring such regions as are mountainous or hilly, and is more numerous in the central portions of Europe than in the extreme south. Despite the shortness of its wings, the Sparrow Hawk flies with ease and rapidity, but when upon the ground it hops in the most ungainly manner. Towards such of its feathered brethren as are larger than itself it exhibits no trace of fear, and pounces upon its prey with a dexterity and courage that will bear comparison with the demeanour of the noblest of its congeners. In these encounters, the female bird has decidedly the advantage over her mate, and can bear the brunt of a battle to which his strength would be quite inadequate. Instances have been recorded in which this Hawk has been so eager in the pursuit of its prey as to follow the victim even into a house or wagon, and we lately heard of one darting into a railway carriage when in rapid motion in order to secure its prize. Birds of all sizes, including domestic fowls, are boldly attacked; Naumann mentions having even seen a Sparrow Hawk swoop down and fasten itself upon the back of a Heron. Small quadrupeds are devoured by these birds in great numbers, and they will sometimes stoop upon hares, but whether this is done with any hope of overcoming them, or merely for pleasure, we have not been able to ascertain. In so much dread is this formidable enemy held by the objects of its attack, that on its approach some birds will throw themselves as though dead upon the ground; others will make for their hiding-place with such devious turnings from the direct path as baffle even the skilful steering of their pursuer, and then dart into the inmost recesses of some protecting bush, and thus place themselves for the time in safety. Such of the swift-flying smaller birds as do not hold the Sparrow Hawk in dread, avenge themselves by following it boldly with loud cries whenever it appears; and so annoying does this reception prove to the tyrant of the woodland, that on the approach of some species of Swallows, whose flight is too rapid to admit of revenge, it will soar at once high into the air and beat a hasty retreat to its forest glades. The prey of the Sparrow Hawk is usually conveyed to some quiet spot to be devoured at leisure; the large quills are then pulled out and the carcase devoured piecemeal, the indigestible portions, such as bones, feathers, and hair, being subsequently ejected from the mouth, collected into large balls called castings; it also frequently destroys the eggs and young of such birds as make their nests upon the ground. The voice of this species is but seldom heard except during the breeding season. The nest, which is placed in some thicket at no great elevation, is built of small branches of fir, birch, or pine trees, and the slight hollow that forms the bed for the young is lined with down from the body of the female parent. The eggs, from three to five in number, are large, and very various both in shape, colour, and size; the shell is thick, smooth, white, or greyish or greenish white, and more or less distinctly marked with spots of reddish brown or greyish blue, sometimes lying thickly together and sometimes very sparsely scattered over the surface. The female alone sits upon the eggs, and testifies the utmost solicitude and affection for her young brood, retaining her seat upon the nest in spite of repeated alarms, and doing battle with all intruders. Both parents seek the food necessary for the young family, though the female only is capable of preparing morsels delicate enough for the tender beaks of the nestlings, who, we are told, occasionally perish from hunger should they lose their mother and be left to the more clumsy ministrations of the male bird. The young are fed and instructed long after they have left the nest. Most numerous are the dangers to which the European Sparrow Hawk is exposed, for not only men, but all such birds as are more powerful than itself pursue it with unextinguishable hatred and animosity; in some parts of Asia, on the contrary, it is regarded with favour, owing to the facility with which it can be trained to hunt the smaller kinds

of game, particularly Quails; in the southern districts of the Ural, according to Eversmann, large numbers caught in the summer are trained for this purpose, and after having been employed during the autumn are again let loose in order to avoid the difficulty of keeping them through the winter months. The female alone is reared for the chase, the male, when captured, being allowed to fly again, as useless. In India this bird and another species are regarded with equal favour, and are employed by the native falconers in the pursuit of Partridges, Quails, Snipes, Pigeons, and Minas.



THE GOS HAWK (*Astur palumbarius*).

THE TRUE HAWK, OR GOS HAWK.

The TRUE HAWK, or GOS HAWK (*Astur palumbarius*) resembles the Sparrow Hawk in many of its features, but differs from that bird in the compactness of its body, and in the strength of its beak; the tail is rounded, the feet powerful, and the plumage peculiarly marked. This Hawk is about one foot and three-quarters in length, and three feet and a half across; the wing measures twelve inches, and the tail eight and a half; the female is five inches longer and six inches broader than her mate. The plumage upon the upper part of the body is blackish brown, more or less shaded with greyish blue; the lower portions are white, the shafts of the feathers being brownish black, as are the undulating lines with which they are ornamented; the beak is greyish brown, the cere, eyes, and feet pale yellow. In young birds the upper portion of the body is brown, each feather being

bordered and spotted with reddish yellow ; the lower parts are of a reddish shade, and at a later period of a reddish white, marked with longitudinal brown streaks ; the beak, eyes, cere, and feet are paler than in the adult.

The habitat of the Gos Hawk is as extensive as that of the Sparrow Hawk ; it is found in great numbers in northern countries, and in some districts may be regarded as stationary ; in Southern Europe it is extremely rare, and, according to our own observation, is seldom met with in Northern Africa or India. Wooded country, interspersed with fields and valleys, afford it the localities it prefers, and it is much more numerous in extensive forests than in comparatively small woods. In its habits this species is eminently unsocial, living almost invariably alone, except during the breeding season ; its disposition is cunning, wild, and violent, and its movements active and powerful. When upon the wing, it may be seen hovering from time to time, and then rushing down upon its prey with noisy impetuosity ; in making a swoop it cleaves the air with great force, the tail at these times being partly outspread. In the air the Gos Hawk is completely master of its movements, and steers its course with imposing majesty ; whilst upon the ground, on the contrary, its gait is awkward and ungainly, its step being a sort of lame hop. Its voice consists of a variety of sounds, but is rarely heard ; it is loud, resonant, and extremely unpleasing. So rapacious is this formidable bird, that its destructive attacks are repeated almost without intermission during the entire day on birds of all sizes, and even rabbits, squirrels, and water-fowl may be numbered among its victims, the prey being seized with equal facility either when running, flying, or swimming ; some of the smaller quadrupeds are so completely paralysed with fear at the approach of their destroyer that they crouch down incapable of moving a limb, while the Hawk swoops down upon them with wings almost closed and talons outspread, producing as it descends a rushing sound, that may be heard above a hundred paces from the spot. Remarkable anecdotes are cited by reliable writers of the extreme cunning and intelligence of these birds when strength proves unavailing. Count Wodzicki tells of a sagacious Hawk that, when all other means had failed by which it hoped to seize upon some tempting but wary pigeons, at length decided upon perching motionless upon a branch, with neck drawn in, so as to simulate an owl ; the *ruse* completely succeeded, for the birds, fearing nothing from the huge but helpless looking creature, ventured out and were seized with a rapidity from which escape was hopeless. The same author mentions an instance of a trick played upon another flock of pigeons, in which very different means were adopted ; the Hawk in this case, finding that its hoped-for prey utterly refused to come out and allow themselves to be caught, at last alighted upon the dove-cot, and beat and stamped upon it with such violence that the terrified inhabitants were fairly driven from their retreat. Audubon mentions having seen a Hawk kill five Blackbirds in succession as a flock was passing the Ohio, the victims being successively thrown down upon the water until the destroyer had time to collect them at his leisure ; this latter feat was accomplished by a series of very dexterous movements, and the booty safely deposited upon dry land. The extraordinary rapacity of the Hawk fully accounts for its unsocial habits ; it would, in fact, be impossible for these birds to live together ; no relation of life appears to excite any natural feeling, even parents devour their offspring with the most revolting cruelty—indeed, so great is their ferocity, that although provided with abundance of other food, they cannot restrain their murderous propensities, if brought in contact with birds even of their own species. Such of the feathered denizens of the forest as are sufficiently swift of wing to be able to elude the Gos Hawk, pursue it fearlessly, and chase it with rude cries whenever it appears ; Crows and Swallows are particularly addicted to this most harassing mode of avenging the wrongs of their more helpless companions.

The eyrie of this species is large and shallow, built of green fir or pine branches, which are added to or renewed from time to time ; the bed for the young is lined with down stripped from the parent

birds. Old and high trees are usually preferred for building purposes, the nest being placed on a large branch near the main stem; year after year a pair of Hawks will return to the same spot, at each visit making such repairs as the eyrie requires, and renewing the green branches. The eggs, two to four in number, are large, long, and very wide towards the middle; the shell is thick, rough, of a greenish-white colour, and either entirely unmarked, or spotted with yellow; the female alone sits, but both parents guard the nest with jealous care, often attacking men, or even horses should they approach too near. The young grow very quickly, and are so voracious that the eyrie often looks like a slaughter-house, the parents having as much to do as they can manage in catering for their clamorous family, whose greed is so excessive that they will often fall upon and destroy each other when too impatient to await a fresh supply of food. Many and various are the means employed to clear the country of these destructive birds, but all attempts prove inadequate to cope with the extreme cunning and sagacity which they display on the approach of danger. In some parts of Asia their worst qualities are the points on which the favour of the native falconers is grounded, and by them these birds are prized as unrivalled for the purposes of the chase; they even employ them in the pursuit of such large game as hares. When about to hunt large animals, the legs of the Hawk are carefully covered with a kind of leather gaiters, to defend them when dragged through bushes and brambles, as their intended victim endeavours to escape from its clutch; seldom, however, does it succeed, for the bird holds firmly on with one foot, keeping the other raised to clear aside the branches, or get a firm grasp upon a bush, and thus arrest the progress of its quarry when the proper moment arrives.

The SINGING HAWKS (*Melierax*) are an African group, differing somewhat in shape from their European relatives. Their body is more slender, the beak less powerful, and the wings longer than in the races hitherto described; the tail is rounded at its extremity; the tarsi are strong and high, and the feet provided with comparatively short claws.

THE TRUE SINGING HAWK.

The TRUE SINGING HAWK (*Melierax musicus*), as the largest member of this group is called, inhabits Southern Africa, and is replaced in the central portions of that continent by another species (*Melierax polygonus*), closely resembling it in appearance, though somewhat smaller. In the latter the plumage on the upper part of the body, throat, and upper breast, is slate-coloured; the belly, wings, hose, and large wing-covers are white, striped with delicate grey zig-zag markings. The quills are brownish black, the tail-feathers of a paler shade, the latter are tipped with white, and striped three times with a crooked white line; the iris is of a beautiful brown, the beak dark blue, the cere and feet bright orange. The length of this bird is about one foot seven inches, its breadth three feet two inches; the wing measures eleven inches and two-thirds, the tail eight inches and one-third. The female is about one inch and a half longer and two inches broader than her mate. The plumage of the young is brown above, and upon the belly and breast white striped across with light brown; the sides of the head and a line over the breast are of the latter colour. The first-mentioned species is similar in its colour and markings. Le Vaillant, who first described these remarkable Hawks, tells us that they are numerous in Caffraria, where they usually frequent the widely scattered trees, and subsist principally upon hares, partridges, quails, rats, mice, or similar fare. The nest is large, and contains four pure white eggs. Le Vaillant has given the name of Singing Hawk to the species, from an extraordinary fact of which he assures us he had personal experience, namely, that they are capable of pouring out a flow of song, and sometimes continue their vocal exercise for hours together. For our own part we have never heard one of these birds sing, and therefore must

abstain from either depreciating or maintaining this statement ; but similar species, carefully observed by ourselves, in the more northern parts of Africa, were capable of nothing but a prolonged whistle or piping scream. In appearance alone do these Hawks bear any resemblance to their European congeners ; in their habits they are dull, extremely indolent, and entirely incapable of the daring exploits that render other members of their race so formidable ; it is by no means uncommon for them to sit for hours together dozing upon a tree, or lazily scanning the surrounding country almost too idly even to note the prey they might easily secure. When in the air their movements resemble in some respects those of our Hawk, but are entirely without the precision and rapidity which render that bird so terrible an opponent. Whilst perched among the branches their appearance is ungainly, as they squat motionless with head drawn in, staring fixedly at one particular spot. According to our own experience, they devour toads, grasshoppers, and various kinds of insects in great numbers ; Hartmann tells us that they will also eat lizards. The prey is usually pounced upon as it goes down to the water to drink, yet even then, so slow and apathetic is this bird in its behaviour, that an attempt to seize the victim often proves abortive. We are entirely destitute of particulars as to the incubation of this species.

THE SERPENT HAWK.

The SERPENT HAWK (*Polyboroides typicus*) is a very remarkable member of the Hawk family, inhabiting the same parts of Africa as the bird last mentioned ; a very similar species is also met with in Madagascar. The Serpent Hawk is recognisable by the smallness of its head and body, bare cheeks, slender beak, and enormous wings ; the tail is long, broad, and slightly rounded ; the tarsi high and thin, and the toes small. The plumage is dark greyish blue upon the upper portion of the body, front of neck, and breast ; the primary quills are black, the upper secondaries grey, with a black spot near the tip ; the tail-feathers are black tipped with white, and have a broad white streak across the middle. The belly, hose, and tail-covers are white, delicately marked with black. The eye is brown, the beak black, the feet lemon colour, the cere and bare patches round the eyes pale yellow. The male bird is one foot eleven inches and a half long, and four feet four inches across the span of the wings ; these latter are sixteen and the tail eleven inches in length ; the tarsus measures three inches and a quarter, and the middle toe not more than one and a half.

This species is met with throughout the woodland districts of Eastern Soudan, where it frequents such localities as are in the immediate vicinity of water, as it there finds in abundance the reptiles on which it principally subsists. The manner in which this Hawk obtains its prey is very remarkable, as it is enabled to draw its victims from their holes by the aid of a most curious contrivance ; the tarsus is so constructed as to allow the foot to be turned in all directions, backwards as well as to the sides, and the claws being comparatively small, the leg can be introduced through a very narrow aperture ; it is then moved rapidly into every recess and cranny of the hole, to the inevitable discovery of its helpless occupant. The Serpent Hawks rarely pass much time upon the wing, and, indeed, do little more than fly from one tree to another, exhibiting in all their habits that sluggish and unsocial temperament common to most reptile-eating birds ; they live for the most part alone, and spend their time in perching lazily on a bough, or flitting from tree to tree. Verreaux tells us that they will sometimes pursue small birds or quadrupeds.

The succeeding families of RAPTORIAL BIRDS are distinguished by the circumstance that, although they pursue and kill living prey, they will likewise occasionally eat carrion ; in order, however, to make the arrangement of this heterogeneous multitude at all clear to the general reader, we must subdivide them into several different groups.



EAGLES.

THE EAGLES.

THE EAGLES (*Aquila*) are distinguishable by the following characteristics: their body is stoutly and compactly built, their head is of moderate size and entirely covered with feathers, and the beak, which is straight to a considerable distance from its base, terminates in a curve or hook; the upper mandible is without teeth, but is slightly waved at its sides; the cere is bare, the tarsi are of moderate size, strong, and more or less covered with feathers, extending in some cases down to the toes; these latter are very powerful, often of great length, and armed with large, much curved, and sharply pointed



THE BALD EAGLE *Haliaeetus americanus*

talons. The wings of some species reach as far as the end of the tail, in others no farther than its root; in all they are rounded at the tip, the fourth and fifth quills being longer than the rest; the tail is long, broad, and either rounded or straight at its extremity. The plumage consists of large and usually pointed feathers, rich in texture, often very soft, but occasionally coarse and harsh. One of the distinguishing features in the plumage of the Eagle is that the feathers on the back of the head and nape are either pointed or considerably prolonged. The eye is large and fiery, and the eyebrows very distinctly marked, thus giving an expression of fierceness to the face.

A glance at different members of the Eagle tribe will at once convince us that they do not all belong to the same country or climate. It is true that they are dispersed over the surface of the whole earth, but each species has its appointed district; all, however, avoid the abodes of man, and make their nests in some unfrequented spot. Mountains, forests, sea-coasts, or the banks of lakes or rivers have each their appointed forms, while some species roam at large over the open plains of the countries in which they live. Such members of the family as inhabit the more northern portions of the globe migrate as winter approaches, and pass their lives in sweeping from land to land, except at such times as they are busied with the cares of incubation. In their habits all are unsocial, keeping company rarely even with individuals of their own race, except during their winter journeyings, and suffering no intruder to approach the spot selected as a breeding-place; so strong is this dislike to society that even when several Eagles are attracted by the same prey the companionship is merely in appearance, each bird coming and going without any reference to the movements of the rest. Notwithstanding this unwillingness to join company with others, even of their own species, they are much attached to their mates, each pair living in close companionship throughout their whole lives, and frequently permitting smaller birds to make their nests in close proximity, either regarding them as entirely beneath their notice, or, perhaps, feeling that such despicable morsels are not worth the long and troublesome chase which their pursuit would necessitate. To some members of the Eagle family the name of Hawk Eagles has been assigned, on account of their very decided resemblance to the Hawk, not merely in appearance, but in disposition.

Though unable to cleave the air with the rapidity of the Falcon, the flight of an Eagle is extremely imposing, as it rises with slow and majestic strokes of its large wings, steering its course by the aid of its tail, or hovers for minutes at a time without any apparent effort; when descending to seize its prey its movements are somewhat more rapid, but are not to be compared with the stoop of the Hawk. While upon the ground nothing can be more clumsy than the mode of progression employed by these large birds; they hop, or rather jump, with a most peculiar step, at the same time helping themselves along with their wings; far different is their appearance when they are seen perched with body erect upon some tree, from whence they gaze upon the world beneath with a calm dignity worthy of the royalty not unfrequently assigned to them. The sight of the Eagle is more highly developed than any other sense; it also hears well, and exhibits a marked dislike to any sharp sound. Many wonderful tales have been circulated as to the power of appreciating odours possessed by these birds, but for our own part we consider these accounts as much exaggerated. All the members of the family are intelligent, prudent, in some cases cunning, and they have such an appreciation of their own strength as to impart an air of nobility to their demeanour even towards man himself. When in pursuit, Eagles exhibit great fierceness, and seem to enjoy the full excitement of the chase; even such large quadrupeds as foxes fall victims to their ferocity, and the swiftest inhabitants of the air are not safe from their pursuit; instances are on record in which man himself has had to combat the attacks of these bold and audacious birds.

The eyries built by the various species of Eagles differ but little in appearance; all are exceedingly large, broad, and very shallow. They are formed of boughs, sometimes of considerable thick-

ness, on these are placed smaller branches, and the interior is then padded with twigs upon which the leaves have been left, in order to form a warm bed. These nests are usually constructed upon a tree, or upon some rocky precipice. The breeding season varies according to the climate; the eggs often but one, rarely three in number, are incubated by the female alone. Both parents, however, assist in rearing their progeny, and have been known to fly to a distance of many miles in search of food for their hungry family. The nestlings are tended for some time after they are fully fledged.

Foremost among the Eagles three species stand pre-eminent, and have been celebrated and dreaded from the most ancient times. These form the group of TRUE EAGLES, and are recognisable by their powerful bodies, large and well-shaped heads, and broad long wings, which reach to the end of the tail; in the wings the fourth quill is longer than the rest; the tail is long, and the legs strong and of moderate height; the beak is large, the upper mandible curves very decidedly from the cere downwards, and bulges outwards at its sides; the eyes, which are of great size, lie partly concealed under the projecting brows; the feet are powerful and of moderate length, the claws large, curved, and sharp. The plumage is rich and soft, and its feathers pointed, those at the back of the head and on the nape being slender and elongated; the tarsi are feathered down to the toes.

Thus far we have described collectively the three species forming the family of True Eagles; but, to avoid confusion, we will now speak of the Tawny, the Golden, and the Imperial Eagles, each under its proper heading.

THE TAWNY EAGLE.

The TAWNY EAGLE (*Aquila fulva*), the largest, strongest, and most compactly built member of the family, is from two and three-quarters to three feet in length, and from six and two-thirds to seven feet in breadth; the wing measures from one foot two inches to two feet, and the tail thirteen or fourteen inches. The largest of these measurements applies to the female bird. When the plumage is in its full beauty, the head and back of the neck are brownish yellow, and the rest of the feathers of a uniform dark brown; the tail is white, striped, or spotted with black at its upper portion, the lower half entirely black; the hose are almost white. Naumann tells that only the two centre tail-feathers are of equal length, those towards the sides being slightly graduated.

THE GOLDEN EAGLE.

The GOLDEN EAGLE (*Aquila chrysaetos*) is much more slenderly built and has a smaller head than the bird above described, but the wings and tail are longer, and the former do not extend as far as the extremity of the tail. The male is three feet long and seven feet and a quarter across the span of the wings; the wing measures two feet four inches and the tail thirteen inches; the female is three feet two inches in length, and seven feet and a half across. The plumage is lighter than that of the Tawny Eagle, and more of a reddish brown upon the breast, hose, and lower tail-covers; the region of the shoulder is indicated by a white spot; the tail is always brownish grey, marked with irregular crooked black lines, and the black stripes are narrower than in the preceding species. All the feathers that compose the tail are of equal length, except the two outer ones, which are somewhat shortened; the lower part of the wing is always very dark, and often entirely without markings. The plumage of the young is darker, and without the white patch in the shoulder, and the reddish-brown feathers on the back of the head and neck, that characterise the adult bird.

THE IMPERIAL EAGLE.

The IMPERIAL EAGLE (*Aquila imperialis*) is considerably smaller than the preceding, not exceeding two feet and a half to two feet and three-quarters in length; its breadth across the wings is

from six to six feet and two-thirds, the wing measures from two, to two feet and a quarter, and the tail from ten, to twelve inches and a half. The female is of the same size as the male Tawny Eagle. The body of this species is compact, and the wings so long that they extend beyond the comparatively short tail. In the adult the plumage is of a dark, somewhat variegated, brown; the head and nape are reddish yellow, and the shoulders are ornamented with a white patch; the tail-feathers are grey, striped with black. The plumage of the young is tawny, marked longitudinally with dark brown. Both the Golden and Tawny Eagles are found throughout all such countries of Europe as possess high mountains or extensive forests, and both are met with in many parts of Asia and North America. The Imperial Eagle, on the contrary, inhabits the south-eastern portion of our continent from Hungary to Mongolia; Jerdon tells us that it not only visits India during its migrations, but breeds there. This last species frequents open tracts of country, whilst the Tawny and Golden Eagles prefer rocky districts, the former always building amongst the mountain fastnesses, and the latter occasionally making her eyrie among the branches of one of the gigantic trees of the forest. The Imperial Eagle also makes its nest upon trees, and often at no great distance from the abodes of man. All these birds have many habits in common; they commence their pursuit of prey long after the sun rises, and confine their excursions within the limits of a certain district. Both mates hunt together, but the possession of some delicate morsel which one or other refuses to share with its companion is often a cause of strife between them. The chase lasts till noon, when they retire to rest in some quiet spot, and remain perched with drooping plumage, but with ever watchful eye, whilst the work of digestion is going on. When this period of repose is over they fly in search of water, not only drinking largely, but bathing in the cooling stream. The afternoon is passed in the same manner as the morning; and the early part of the evening is spent in soaring and floating through the air, till darkness has closed around, when the wary couples quietly retire to their safe and often unapproachable sleeping-places. The force with which these enormous birds clutch their prey is so violent that the entrance of a Golden Eagle's claws into the sides of its victim can be distinctly heard, and its flesh is often partially devoured before life is extinct.

Many tales are told of Eagles having carried off young children, and we know instances in which they have attacked man himself. Naumann mentions an amusing example that came under his own notice, a Tawny Eagle in his possession having been captured under the following circumstances:—This rash and hungry bird, he tells us, was tempted to seize upon a fine fat pig as it ran about its native village; but the pig was so obstinate as to appear by no means inclined to leave this world quietly, and uttered such piercing cries as brought a passer-by to its assistance. The peasant succeeded in dislodging the Eagle, who, however, determined not to be entirely baffled, pounced upon a cat that was contemplating the struggle, and flew with pussy to a neighbouring hedge. Exasperated at this second attack, the man rushed into a cottage, seized a loaded gun, and returned in the hope of saving the second victim; but no sooner did the Eagle observe the approach of this disturber of its quiet enjoyment than it darted upon him and attacked him with such fury that he was with difficulty saved by the people who ran in answer to his cries for help, and at last succeeded in taking the bird prisoner.

When about to devour their prey these birds always retire to some spot where they are likely to be unmolested; even whilst the work of destruction is slowly going on they pause from time to time and listen attentively, in the fear that an intruder is at hand. The entire carcase is in most cases consumed, the head being first devoured, and then the rest of the body; even the bones are crushed and swallowed, but the entrails are rejected. The hair or feathers would seem to be actually necessary to digestion, seeing that they are swallowed in large quantities, probably for the purpose of clearing out their stomachs, where they become formed into balls, which are rejected every few days in the shape

of "eastings." When hair or feathers are not obtainable they will swallow hay or straw, apparently for a like purpose. The eyrie is built about the month of March. The eggs, which are comparatively small, are round, rough-shelled, white or greenish grey, and irregularly marked with spots of various shapes and sizes; those of the Tawny Eagle are the largest, and those of the Golden Eagle the smallest eggs of the three; in other respects they so closely resemble each other that the eyries are frequently mistaken. The eggs are sometimes three in number, but it is rare to find more than one, or at any rate two nestlings. The female broods for five weeks, and is assisted by her mate



THE GOLDEN EAGLE (*Aquila chrysaetos*).

in the heavy duty of providing food for the family. If taken from the nest young, Eagles may be easily tamed, and become much attached to those who feed them; if carefully tended they often attain a great age, and instances are on record of their having lived for upwards of a century in confinement.

We learn from Pallas and Eversmann that the Tawny and Golden Eagles are extensively employed by the Bashkirs for hunting purposes. The inhabitants of Mongolia set a high value upon the wing and tail feathers of these birds, offering them to their gods, and also employing them to feather their arrows; they never willingly hurt an Eagle, and should such an accident occur, it is despatched

with the utmost promptitude, in order to avoid the anger of the bad spirits. It is a remarkable fact that these strange superstitions are shared by the American Indians, by whom the body of an Eagle, coloured with red paint, and surmounted with the tail of a rattlesnake, is often employed to symbolise some notable deed of daring. Some tribes regard the plumes as tokens of bravery, placing a feather upon their heads for every enemy they kill, and, when engaged in war, often fasten these feathers to their weapons, or wear them in their hair.



THE IMPERIAL EAGLE (*Aquila imperialis*).

THE SPOTTED EAGLE.

The SPOTTED EAGLE (*Aquila nevia*) is met with in great numbers in Germany, Russia, and some of the southern parts of our continent ; it also inhabits Asia, and during the winter is frequently seen in North Africa. This species is not more than from twenty-five to twenty-seven inches in length, and from five feet four inches to five feet eight inches broad ; the wing measures from eighteen to nineteen inches and three-quarters, and the tail from nine and a half to ten inches. In the adult the plumage is of a uniform brown, darkest and most glossy upon the back ; the back of the head is yellowish red or pale fawn colour ; the centre quills are distinctly striped, the upper and lower wing-

covers bordered with a light shade ; the tail-feathers are numerously striped and mottled, or are of a uniform colour, with a light tip ; the upper tail-covers are brownish yellow. In the young birds the plumage is variegated, the feathers being for the most part brown, and spotted with light yellow on both sides of the shaft and at the tip ; in some instances the wings of the young have a beautiful border ; the hose and lower wing-covers are a mixture of brown and dirty white.

The Spotted Eagle and its congeners for the most part frequent marshy or boggy country, and are found in large numbers in woodland districts. Each pair seems to live within a certain limited space, in the centre of which the eyrie is built ; and so attached are they to the spot they have selected for a home, that it is almost impossible to drive them to other quarters ; even should the eggs or young be destroyed, the parents will not quit the eyrie, or only leave it to erect another a few yards from the old nest. In the northern parts of Europe the Spotted Eagle is met with during the summer, appearing early in March, and leaving about October, some few remain throughout the winter. In fierceness and daring this species is far inferior to any other member of the group to which it belongs ; its manners are gentle and its disposition timid, as may at once be seen by the expression of its eye. When perched, its appearance is extremely ignoble ; but when on the wing it exhibits some of the dignity characteristic of its race, and often passes whole hours in performing beautiful gyrations through the air. This Eagle destroys small birds, mice, and frogs in great numbers ; it perches like a Buzzard upon a tree, stone, or post, and from thence peers around in the hope of descrying a victim ; should its observations prove successful, it at once rapidly descends to seize its prey, which is sometimes pursued with a kind of hopping gait ; it also devours carrion with the avidity of a vulture. The voice of this species is very loud and resonant, and when the bird is pleased its sound is not disagreeable. Birch-trees are usually preferred for building purposes, and where these are not to be found, fir or pine trees are selected ; the eyrie, which is small and very carelessly constructed, is flat, and ornamented with green branches. The egg—for there is usually but one—is either oval or round ; the shell is white, with pale blueish grey, reddish brown, or yellow spots, more or less distinctly laid on ; some are prettily adorned with a wreath of spots round the centre. The female sits for three weeks, and, should she be driven from her charge, perches upon the nearest tree and utters pitiful cries ; the young are tended by both parents, and fed principally upon small reptiles ; if taken from the nest they are easily tamed.

The DWARF EAGLES (*Hieraëtos*) are the smallest members of this family, and have received the name they bear on account of the shortness of their legs ; the two species we are about to describe closely resemble each other, and are about one foot and a half long, and three feet seven inches broad ; the wing measures thirteen inches and three-quarters and the tail seven inches and a quarter. The female is one inch and a half longer and about three inches broader than her mate.

THE BOOTED EAGLE.

The BOOTED EAGLE (*Hieraëtos pennata*) is yellowish white upon the brow, and striped upon the top of the head with a darker shade ; the nape is reddish brown, the mantle and wings blackish brown, each feather having a light edge, and thus imparting a mottled appearance to the back and surrounding the wings with two indistinct borders ; the shoulder is marked with a white spot ; the upper sides of the tail-feathers are dark brown, with a light tip, the lower part is pale grey ; the feathers on the lower portions of the bird are light yellow, with brown lines upon the shafts ; these lines are broadest upon the breast, gradually decreasing until they are scarcely visible upon the hose ; in some old birds these dark markings are only visible upon a small part of the breast ; the eyes are of a pale bronze tint, the beak light blue at its base and tipped with black, the feet lemon yellow, and the cere

straw colour. The young are of a pale rust red upon the lower part of the body, but in other respects resemble their parents. The nestlings are brown above, and reddish yellow beneath; the shafts of the feathers are not striped, and there is no white upon the shoulder.

THE DWARF EAGLE.

The DWARF EAGLE (*Hieraëtos minuta*) is pale reddish brown upon the head and nape, longitudinally marked with black streaks, which are most prominent upon the fore part of the head; the mantle is brown, the long shoulder-feathers blackish brown; the tail is pale brown, tipped with a light shade and surrounded by three or four distinct black borders; the eyes are encircled by a dark ring; the nose, tarsi, and lower wing-covers are paler than the rest of the body; this species has also the white spot upon the shoulders; the eye is brown, the beak blue at the base, black at the tip; the cere and toes are lemon yellow. The young are light rust red upon the head, which is distinctly marked with black upon the fore part; the entire body is paler than that of the older birds, and the borders upon the tail-covers scarcely perceptible. The habitat of the Dwarf Eagles lies within the south and south-eastern portions of our continent; what parts of Asia they inhabit is still unknown, but the Booted species is found throughout the whole of India and Ceylon, and breeds in both countries; during the summer they are very common in Europe, but they migrate either in pairs or flocks as winter approaches, at which season they visit Egypt and the upper parts of the Nile in large numbers. In their habits and disposition the Dwarf Eagles are by no means inferior to the True Eagles, even exceeding the latter birds in energy and activity, but they do not equal them in prudence and foresight. Their flight is rapid, powerful, and light; they hover with ease, and soar high into the air, darting with the rapidity of an arrow upon their prey, and sometimes flying near the ground while engaged in its pursuit. When about to perch they select low branches, upon which they sit erect and motionless, but most carefully observant of all that passes around them. We have never seen one of these birds alone; they are always met with either in pairs or small parties, that remain together even during their migrations. The cry of both species is clear, and has a piping sound. Birds of very various kinds and many small quadrupeds are eagerly pursued by the Dwarf Eagle, who prefers woodland districts for its hunting-grounds, and captures its prey after the manner of the Hawk. The breeding season commences about the month of April, and the eyrie is built with slender branches upon the top of a lofty tree. Several pairs are usually found brooding in close proximity to each other. The eggs, two in number, resemble those of the Hawk in size, form, and colour. When first hatched the young are covered with long, light, silky down, which is yellow upon the top of the head. During such time as the female is engaged in sitting upon the nest, she is constantly relieved for hours at a time by her mate, who frequently takes her place, and exhibits the utmost constancy in his demonstrations of attachment. Wodzicki tells us that when about to approach its eyrie, the Dwarf Eagle perches upon a branch at some distance from it, lowers its head, inflates its crop, and walks slowly into the nest. During the period of incubation, these birds, if molested, exhibit great courage and fierceness; towards the Screech Owl in particular they manifest an inveterate hatred, that leads to many deadly encounters.

The WEDGE-TAILED EAGLES (*Uroaëtos*) constitute a group of large birds that inhabit Australia. In shape and plumage they resemble the True Eagles, but are distinguishable from them by their elongated powerful beaks, long and abruptly-graduated tails, and by the lengthy feathers that adorn the back of the neck.

BOLD WEDGE-TAILED EAGLES (*Uroaëtes audax*).

THE BOLD WEDGE-TAILED EAGLE.

The BOLD WEDGE-TAILED EAGLE (*Uroaëtos audax*) is three feet one inch long, and about six feet eight inches broad. The back and sides of the throat are rust colour, the rest of the body blackish brown. The feathers of the wings and upper tail-covers are edged and tipped with pale brown. The eye is yellowish white, the beak is yellowish grey at its root, and yellow at the extremity; the feet are pale yellow. Another species or variety is also met with, more slender in form and paler in plumage than that above described.

The Bold Wedge-tailed Eagles are common throughout Australia, where they frequent open plains and forests, preferring such localities as are inhabited by kangaroos. Gould tells us that all that has been said about the strength, courage, and rapacity of the Tawny Eagle may also be applied to these birds, whose unremitting attacks upon flocks of sheep are a cause of constant loss to the colonists; small kangaroos they destroy in great numbers, but rarely contend with such as are full grown. Gould also mentions having seen one of these Eagles pursuing a mother kangaroo with great patience, and watching for the moment when fatigue would compel her to empty the young from her pouch, and thus yield them an easy prey. From the same source we learn that they will eat carrion, and may often be seen perched thirty or forty at a time upon the carcase of an ox. The eyrie is built upon such high trees as to be almost inaccessible; in size it varies considerably, as it is enlarged and repaired from time to time by its owners, who return to the same nest for many successive years. The outer walls are formed of large boughs, these again are interwoven with smaller branches, and the interior lined with leaves and slender twigs. According to Ramsay, the breeding season is at the end of the summer. The eggs, two in number, are round and rough shelled, three inches long, and at the thickest part two inches and three-eighths in diameter; these are white, spotted with red, yellowish brown, or purple. Many forests contain the remains of large settlements made by these birds before the white man had penetrated into the interior of the country. The Bold Wedge-tailed Eagle is often taken young from the nest by the natives, and when reared exported to Europe.

The HAWK EAGLES (*Pseudoaëtos Eudolmaëtos*, or *Asturætos*) constitute a group distinguished by their comparatively short wings, that do not reach the end of the very long tail, and by their high tarsi, feathered even to the toes, which are armed with long and broad curved talons; the beak is long, but powerful.

THE HAWK EAGLE.

BONELLI'S HAWK EAGLE (*Pseudactos Bonellii*), as the European representative of this group is called, is about two feet four inches long, and four feet ten inches broad; the wing measures one foot four inches, and the tail ten inches. The female is three inches longer and four inches broader. Upon the brow the plumage is white, as is also a streak passing over the eyes; the top of the head and nape are brown, darkly striped; the upper part of the back is white, its feathers having blackish-brown spots upon their edges; the mantle is of a uniform dark brown, and blackish brown at its extremity; the upper tail-covers are white, mottled with brown; the throat, breast, and centre of belly white, the shafts of the feathers spotted with black; the upper surface of the tail is greyish brown, tipped with white, and marked with seven crooked dark lines; the under side is whitish yellow, spotted with brownish grey. In the young the top of the head is light red, the nape fawn colour, the mantle light brown, each feather being bordered with reddish yellow; the tail is greyish brown above, streaked ten times, and edged with white; the lower portion of the body is principally of a pale yellowish brown, the feathers having delicate dark streaks upon the shafts; the belly and lower wing-

covers are dirty reddish white, without any markings. The eye is bronze colour, the beak greyish blue, the cere and feet greyish yellow.

These Eagles are common in Germany, Greece, and South Italy, and more numerous than any others in Spain and Algiers, where they frequent bare mountains; they are also met with in north-western Africa and India, always resorting to the hilly districts of the latter country. These birds do not migrate, but wander at large in considerable flocks, except during the breeding season, when they are extremely unsocial, prudently permitting none of their companions to approach the nest. In disposition the Hawk Eagle has much in common with the group whose name it bears, equalling the Gos-Hawk in courage and hardihood, but far exceeding it in bodily powers. When upon the wing its movements will bear comparison with those of the Falcon, but when perched its attitude is much less imposing. The eye of this species is peculiarly brilliant and fiery in its glance, clearly indicating the disposition of its owner, whose fierce boldness often leads it to contend with the largest and most formidable of its race. Some writers tell us that the Hawk Eagle confines its attacks to water birds, but this is not the case; in Spain it is numbered amongst the most terrible invaders of the poultry-yard, whence it will carry off a good fat hen under the very eyes of its owner. Jerdon mentions having seen it in India seize upon and bring down Peacocks. The eyrie, which is usually placed in holes of rocks, is but rarely met with; one found by Krüper in Greece contained two eggs, the walls were formed of sticks, and the interior was lined with down. The eggs differed from each other, both in colour and markings, one being of a dirty white without spots, and the other pure white, and distinctly speckled. The nest to which we allude must have been an uncommonly warm cradle for the nestlings, for it was so placed as to be exposed to the full force of the sun's rays.

The HOODED EAGLES (*Spizaëtos*) are slender in form, with short wings, long tails, and high, powerful feet, one distinguishing character being the possession of a more or less developed tuft upon the back of the head.

THE MARTIAL HOODED EAGLE.

The MARTIAL HOODED EAGLE (*Spizaëtos bellicosus*) is the largest and strongest member of this group. This powerful bird is three feet long, and of great breadth; the wing measures two feet, the tail fourteen inches. Its plumage is extremely simple; the upper part of the body is a beautiful brown, the head of a darker shade; the individual quills of the mantle have a light edge, and the wings a border formed by the light tips of the feathers that form the large wing-covers; a white stripe passes over the eyes to the back of the head; the entire lower parts of the body are white, shaded with blue: the tail is dark brown above, light brown beneath, and striped crossways with six dark lines; the outer web of the large quills is black, the inner lighter in colour and darkly striped; the lower wing-covers are pure white, the eye is greyish brown, the cere greenish, the beak black, and the feet lead colour. This species, which is an inhabitant of Africa, has been so little noticed by modern travellers that in describing its habits we must quote Le Vaillant, who wrote at the close of the last century; from this source we learn that the Martial Eagle lives in pairs, which keep together with the greatest constancy, each couple remaining jealously apart from others of their own kind. The nest is usually built upon a solitary tree, and from this point the pair fly forth, and spread terror over the surrounding country. No bird, however large, is safe from their pursuit, and even when Vultures and Ravens combine in the hope of collectively routing the common enemy, they are no sooner face to face with the foe than they are ignominiously put to flight. These Eagles destroy antelopes and hares in great numbers; and are, in fact, the tyrants of the districts they inhabit. When on the wing, their motions are light and rapid; their voice is sometimes harsh and deep, and at others sharp and penetrating. These birds

usually build upon the summits of trees ; sometimes, however, though rarely, their nest is placed in holes of rocks. The cradle for their young is formed of three distinct layers, the first being formed of thick and knotty branches, the second consists of twigs, moss, and large leaves, and the third is a lining composed of still more delicate and elastic materials ; the whole structure is about four or five feet in diameter, and so strongly built that it will bear a man's weight ; the same nest is repaired and employed year after year during the entire life of the couple by whom it was originally constructed. The eggs, of which there are two, are about three inches long, pure white, and almost round. The female alone broods, but both parents unite in the enormous labour required to feed their voracious young, whose gaping mouths they find it almost impossible to satisfy ; indeed, the tales told of the quantity they devour seem almost to border on the fabulous.

THE TUFTED EAGLE.

The TUFTED EAGLE (*Lophoaëtus occipitalis*), also an inhabitant of Africa, is considerably smaller than its congeners, and easily recognisable by the crest that adorns its head. The body is compact, the wings long, the tail short, and the tarsi high. The plumage is almost entirely dark brown, deepest in shade upon the belly, and lightest on the breast ; the edges of the wings, the base of the crest, lower wing-covers, the plumage upon the tarsi, roots of the tail-feathers, and three crooked streaks passing over the tail are of a whitish hue. The eyes are bright yellow, the beak greyish blue, dark at its tip, and light towards its base ; the cere is pale yellow, and the feet straw colour. The length of this bird is about nineteen inches and three-quarters, its breadth forty-six inches ; the wing measures twelve and three-quarters, the tail seven inches. The female is one inch and a quarter longer and two inches broader than her mate.

The Tufted Eagle is met with in considerable numbers in the countries watered by the Upper Nile, where it usually frequents groups of Mimosa trees, perching amongst the branches for hours together, with eyes half closed, as it lazily spreads or closes the crest upon its head. At such times it has very little the appearance of a bird of prey ; but should some poor mouse, rat, pigeon, or squirrel venture near the spot where it indolently reposes, all the instincts of an Eagle are at once exhibited, and the apparently idle dreamer darts down upon its victim with a boldness and rapacity fully equalling that displayed by some European Hawks ; in fact, despite the smallness of its size, it may be regarded as one of the most terrible of the numerous freebooters inhabiting the African forests. We learn from Le Vaillant that this species builds upon trees, and lines its nest with wool or feathers, and that the eggs, two in number, are almost round, of a whitish colour, and marked with reddish-brown spots. The Tufted Eagle is but rarely brought to Europe ; indeed, the Zoological Gardens of London, Antwerp, and Hamburg are, we believe, the only places of public resort that have boasted a living specimen of this very striking species, whose streaming crest, dark, rich plumage, and fiery eyes, cannot fail to render it an object of interest. It may be kept alive for many years in this country if carefully tended, and is but little sensitive as to climate. A Tufted Eagle that we saw in confinement was very lively, and uttered its cry lustily, both morning and evening ; but in its general behaviour showed little of the courage for which it is remarkable in a state of freedom.

The DESTROYING EAGLES (*Pternura*) constitute a race of South American birds, very closely resembling the Tufted Eagle in their general appearance, but recognisable by the comparative length of their wings (in which the fifth quill is longer than the rest), and by the shortness of their toes.

THE URUTAUANA.

The URUTAUANA (*Pternura tyrannus*), the most stately member of this group, is twenty-six inches in length and fifty in breadth; the wing measures sixteen and the tail fourteen inches; the female is two inches longer and three or four inches broader than her mate. In this species, the head, throat, nape, and upper part of the breast are black; the plumage of the back is an uniform blackish brown, that of the lower portions of the body of the same hue, marked with white; the

THE TUFTED EAGLE (*Lophoaëtus occipitalis*).

wing-feathers are ornamented with five or six white lines; the tail-feathers have similar markings, and are bordered with white, so that when seen from above they appear of a greyish brown, and on the under side whitish grey; the plumage upon the legs and feet is also mottled with white. The young birds are brown or greyish brown, the feathers upon the back being edged with a lighter shade; the throat is whitish, the breast yellowish brown, marked with dark spots; the eye orange colour, the beak greyish black; the cere greyish yellow, and the feet pale yellow.

The Urutaurana inhabits the forests in the interior of Brazil, but is never met with in large

numbers ; indeed, the Prince von Wied, who first discovered this species, only captured one specimen, and Burmeister saw but two during his travels. The bird shot by the first-mentioned naturalist was killed whilst in the act of seizing an opossum. Monkeys and small quadrupeds of all kinds constitute its usual food. The nest, which was built upon the branch of a tree, contained but two eggs. These scanty particulars include all the information that has as yet been obtained respecting its habits.

Brehm mentions having seen a still rarer species, the *Pternura Isidori*, in confinement, and tells us that when first caged it proved extremely fierce and shy, becoming, however, much tamer after a few months. It would eat every kind of animal food, even fish ; but always carefully examined any new viand before proceeding to devour it. This bird exhibited perfect indifference to change of climate, frequently remaining voluntarily exposed to a pelting rain or fall of snow when it could have readily found shelter beneath the roof of its cage.

The BRAZILIAN EAGLES (*Morphnus*), also inhabitants of the woods of Brazil, form a race of remarkable birds, concerning whose proper position there has been great variety of opinion, seeing that they combine the size, strength, and noble appearance of an Eagle with the shape of the Sparrow Hawk. All the members of this group possess stout bodies and large heads ; their wings are short, their tails broad and long ; the tarsus is at least twice as long as the middle toe, and but slightly covered with feathers below the heel, the other parts being protected with horny plates ; the toes are powerful, though short, and armed with strong, sharp talons ; the beak is long, shallow, and comparatively weak ; the upper mandible terminates in an abrupt hook, and its edges bulge slightly outwards.

THE CRESTED BRAZILIAN EAGLE.

The CRESTED BRAZILIAN EAGLE (*Morphnus Guianensis*) is the species with which we are most familiar. In length this bird measures twenty-five, in breadth fifty-seven inches ; the wing from fifteen to sixteen, and the tail from eleven to twelve inches. The long, streaming, and somewhat owl-like plumage is prolonged at the back of the neck into a crest six inches long, and varies considerably according to the age of the specimen. We learn from the Prince von Wied that the head, throat, breast, belly, rump, and legs are of spotless white, only varied here and there by a slight yellow shade ; the back, shoulders, and wing-covers are of a pale greyish red, the feathers being spotted and mottled with red ; the quills and tail are blackish brown, edged with a narrow irregular greyish-red line. Pelzeln considers that the plumage above described belongs to the young, and tells us that as they increase in age their feathers become darker. According to this authority, the old birds are dark brown upon the head and throat, and greenish black upon the whole of the upper part of the body and breast ; the upper tail-covers being streaked and tipped with white. We must leave it to future naturalists to decide which of these descriptions is correct.

These Eagles inhabit the whole of South America, frequenting both the forests near the coast and such fertile spots as are occasionally found upon the barren steppes ; but districts near rivers appear to be their favourite resorts. According to Schomburghk, they are easily recognisable by their loud cry, and by the effect of their snowy plumage, which acquires new beauty by contrast with the deep blue sky under which they wheel their rapid and varied flight. When about to perch they select the summit of a lofty tree, and often linger for hours together upon the same branch, almost motionless, or amusing themselves by playing with and exhibiting their flowing crests in a variety of positions. We learn from the Prince von Wied that they subsist principally upon opossums and monkeys, but will also devour a great variety of small quadrupeds and birds. The capture of the Crested Brazilian Eagles is attended with considerable difficulty, and their eyries are almost inaccessible, owing to the great height of the trees upon which they are built. It would seem that these birds are by no means

inferior to their congeners in courage, for the Prince von Wied mentions that the specimen he obtained, though it had been shot through the neck by a large arrow, resisted boldly, both with beak and claws, when he attempted to take possession of it.

THE HARPY EAGLE.

The HARPY EAGLE (*Harpyia destructor*) is the most formidable of all the Eagles found in South America. The body of this bird is powerful, its head large, its tail robust and of considerable length; the wings, on the contrary, are short and blunt; the beak is unusually high and strong, very decidedly rounded at its summit, and sharp at the edges, which bulge outwards below the nostrils, and form a tooth-like appendage; the feet are stronger than those of any other Bird of Prey, the toes are long, and armed with very long, thick, hooked talons; the tarsi are partially covered in front with feathers, the bare places being protected by large horny plates. The plumage, which is soft and rich, is prolonged into a large, broad crest at the back of the neck; the head and nape are grey, the crest, and entire back, wings, tail, upper part of the breast and sides of the rump, dark slate colour; the tail is ornamented with three white stripes; the lower portion of the breast and rump are white, the belly and legs are also white, the former spotted and the latter streaked with black. The beak and claws are black, the legs yellow, and the eyes reddish yellow. In the young bird all these markings are indistinct; the feathers on the back are striped with grey, and those upon the breast and belly spotted with black. Tschudi gives the length of this species as being three feet two inches, that of the tail being one foot one inch, whilst according to Burmeister its size exceeds this measurement. The middle toe is three inches, the hinder toe one inch and a half long, and both are furnished with claws an inch and a half in length.

All the large forests of South America, from Mexico to the interior of Brazil, are inhabited by this large and formidable Eagle, which, although it occasionally visits the warm valleys interspersed among the mountain ranges, never leaves them to take shelter on the rocky heights by which they are surrounded. Such old writers as have treated of the Natural History of the American continent never fail to mention so destructive a bird, and about its life and habits many strange fables have been invented. Fernandez describes the Harpy as being as large as a sheep, and constantly attacking men; but tells us that notwithstanding its great fierceness it can be tamed and employed in the chase. Mauduyt repeats the above statements, and adds thereto that a Harpy with one blow of its beak, is able to split open a man's skull; stating, moreover, that these birds are much addicted to this exercise of their powers. Modern naturalists have refuted these notions, and we will give, in a small compass, the facts which such men as D'Orbigny and Tschudi have been able to ascertain by their own observations. According to these authorities, the Harpy dwells in the moist, well-watered forests of South America, within the boundaries already indicated, rarely, however, appearing in the depths of these leafy wildernesses, but frequenting the banks of rivers, where an abundance of animal life is always to be met with. In no part of the continent are these birds to be found in great numbers, doubtless owing to the fact that from time immemorial they have been hunted by the natives for the sake of their feathers. Like the Hawk, they are seldom seen on the summits of trees, but sit upon the branches, whence they rise with short, irregular strokes, and fly with arrow-like rapidity when in pursuit of prey, swooping upon it with great force, after describing a few preparatory evolutions.

According to D'Orbigny, these Eagles are of solitary habits, except during the breeding season. From Tschudi we learn that the Harpy is much dreaded by the Indians, owing to its devastating attacks upon their property; indeed, in some woodland districts the inhabitants find it impossible to keep poultry or small dogs, for so bold and audacious are these feathered poachers that they have been known to seize a fine fat hen whilst its owner was standing not a yard from the spot. All such

quadrupeds as are not large, or powerfully armed, fall victims to their voracity; and Schomburghk was told by the natives that instances are on record of children having been carried off and devoured. From the same source we learn that the Sloth is sometimes literally torn piece by piece from the branches when it cannot be induced to relax its hold by other means. We need scarcely say that we do not vouch for this latter statement. By the monkey tribes that swarm and gambol in the South American forests, the Harpy is regarded with such dread that, should a frolicsome party be made aware of the approach of their powerful enemy, the terrified creatures at once beat a hasty retreat to the thickest parts of the surrounding foliage, uttering the most pitiful cries as they endeavour to escape from the impending danger, against which all attempts at defence would be useless. The eyrie of the Harpy is built upon lofty trees, and the Indians assert that the same nest is employed for many successive years: the eggs, as far as we can ascertain, have not as yet been found. These remarkable birds are so highly esteemed by the native tribes, that the happy possessor of a live Harpy is regarded with envy and increased respect by his less fortunate neighbours. Upon the women devolves the task of feeding and tending these valuable members of the family party, whose feathers, plucked from the wings and tail twice in the year, afford the owners not only the means of barter for any article they may desire, but are employed as much-coveted decorations for the head-dress and accoutrements of a warrior. In Peru, the hunter who succeeds in capturing a Harpy is allowed the privilege of taking his prize from door to door, to receive such articles as eggs, maize, or poultry, in acknowledgment of his prowess.

Pourlamaque informs us that in the countries watered by the Amazon, the flesh and fat of the Harpy are considered valuable for healing purposes, both by the native and European inhabitants. Many of these birds have been brought alive to Europe, but they never become tame; when confined, they exhibit the most insatiable voracity, devouring every kind of animal food, but preferring to receive their prey whilst it is still alive. They appear to feel no affection towards those that feed them, and are so extremely ferocious that it is impossible to introduce even one of their own kind into the cage that they occupy.

The SEA EAGLES (*Haliaëtus*) constitute a well-defined group of very large birds, armed with long and powerful beaks, which terminate in an abrupt hook, and rise but slightly above the cere; the tarsi are only partially covered with feathers; the talons are long, sharp, and hooked, and the toes distinctly separate; the wings are large, the third quill longer than the rest, reaching almost to the tip of the broad and more or less rounded tail. The plumage is rich, and usually of a grey colour; the feathers upon the head and nape are only slightly elongated, but terminate in a sharp point; the tail is *usually*, and the head *occasionally*, white.

THE SEA EAGLE.

The SEA EAGLE (*Haliaëtus albicilla*) is met with in large numbers upon all European sea-coasts. This species is at least two and a half, generally three feet long, and from seven to eight feet broad; the wing measures two feet, and the tail one foot. The plumage of the full-grown birds is greyish brown upon the head and throat, the body is fawn colour, the wings tipped with black, and the tail with white. The eyes, beak, cere, and feet are yellow. As the Sea Eagle increases in age, the colours of its feathers fade, until the upper part of the body is white, and the lower portion greyish white. The young birds are principally brown, spotted, or mottled, with white beneath, and have a dark tail.

The WHITE-HEADED SEA EAGLE (*Haliaëtus leucocephalus*), the North American representative

of the species above described, is somewhat smaller than its European congener, its length not exceeding from two feet four inches to two feet eight inches ; its breadth is from six feet to six feet nine inches ; its wing measures from twenty to twenty-two inches, and tail ten and a half to eleven and a half inches, according to the sex. The plumage of the old bird is dark brown upon the body, each feather being edged with a lighter shade ; the head, upper part of the throat, and tail are of snowy whiteness, and the wings black ; the eyes, cere, beak, and feet are somewhat paler than in the



THE HARPY EAGLE (*Harpyia destructor*).

preceding species. In the young birds the plumage is almost entirely blackish brown, nearly black upon the head, throat, and nape, and presents a lighter appearance upon the back, wings, and breast, owing to the feathers having a white edge. The beak is dark grey, the cere greenish yellow.

The SEA EAGLE is found throughout the whole of Europe and a large part of Asia ; it likewise visits Africa regularly during the winter months. It is certain that more than one species inhabit

the European continent, as those found in the more northerly latitudes greatly exceed in size those of Southern Europe. We cannot do better than lay before our readers the description of the habits of this bird as given by Audubon. Near the border of some large stream, "this ruthless tyrant may be seen perched in an erect attitude on the highest summit of the tallest tree, from whence his glistening but stern eye looks down upon the scene beneath. He listens attentively to every sound,



THE SEA EAGLE (*Haliaeetus albicilla*).

glancing now and then around, lest even the light tread of the fawn should pass unheard. His mate is perched on the opposite bank of the river, and, should all be silent, warns him by a cry to remain patient. At this well-known call the male partly opens his broad wings, inclines his body a little downwards, and answers to her voice in tones not unlike the laugh of a maniac; the next moment he resumes his erect attitude, and all is again silent. Ducks of many species, the Teal, the Widgeon, the Mallard, and others, are seen passing and following the course of the current; but the Eagle heeds them not, they are at this time beneath his attention. The next moment, however, the wild trumpet-

like scream of a yet distant but approaching swan is heard. A shriek from the female Eagle comes across the stream, for she is fully as alert as her mate. The latter suddenly shakes himself, and with a few touches of his beak arranges his plumage. The snow-white bird is now in sight, her long neck is stretched forward, her eye is on the watch, vigilant as that of her enemy; she approaches, however, and the Eagle has marked her for his prey. As the Swan is passing the dreaded pair, the male Eagle starts from his perch with an awful scream, that to the Swan's ear brings more terror than the report of a gun. Now is the moment to witness the Eagle's powers: he glides through the air like a falling star, and comes upon the timorous quarry, which, in an agony of despair, seeks by various manœuvres to elude the grasp of his cruel talons. It mounts, it doubles, and willingly would plunge into the stream, were it not prevented by the Eagle, which—long possessed of the knowledge that by such a stratagem the Swan might escape him—forces it to remain in the air, by attempting to strike it with his talons from beneath. The poor Swan has now become much exhausted, and its strength fails it; it is almost at its last gasp, when its ferocious pursuer strikes with its claws the under side of its wing, and, with irresistible power, forces the bird to fall in a slanting direction upon the nearest shore. And now the Eagle presses down his powerful feet, and drives his talons deep into the heart of the dying Swan; he shrieks with delight as he feels the last convulsions of his prey, and the female, who has watched every movement of her mate, now sails to the spot to participate in the gory banquet."

Space will not allow us to quote Audubon's description at greater length, and we must, therefore, endeavour to give particulars of the habits of the Sea Eagles in as few words as possible. All the various species of these birds pass their entire lives upon or in the immediate vicinity of the sea-coast, only ranging further inland during the time that elapses between leaving the nest and choosing a mate. As far as we can ascertain it is an extremely rare occurrence to find a pair of Sea Eagles building upon forest trees, even when the latter are situated in well-watered districts, if at any great distance from the sea-coast. Except during the breeding time they are social, and pass the night together, selecting trees, rocks, or, when the weather is warm, small islands as their resting-places. At the first dawn of day the whole party is astir, and hastens at once in pursuit of food, usually preferring such prey as Ducks, Auks, fish, or the smaller Cetaceans. Homeyer mentions having seen these bold and powerful birds overcome a fox, in spite of the cunning usually displayed by the wary quadruped in eluding danger. Sheep and goats are frequently destroyed. The Sea Eagles dive deep into the water to obtain fish, seize young dog-fishes as they swim close to the mother's side, and have been known even to carry off children. In Kamschatka it is not uncommon for these tyrants of the coast to be drawn under water and drowned, whilst contending with a dolphin or sturgeon; Lenz mentions having seen a Sea Eagle on one occasion seize one of the latter, which was too heavy to be raised from the water; all endeavours of the sturgeon to drag its enemy beneath the waves proved fruitless; the bird would not relinquish its hold, and both floated along together, presenting the appearance of a skiff in full sail. At last some men, who had been attracted by so strange a sight, came up to the struggling combatants in a boat, and succeeded in capturing them both.

In comparison with the flight of the True Eagle, the movements of the *Haliaëtus* in the air are slow and heavy; upon the ground, however, it moves with great facility, and can dive to a certain depth. In the development of its senses it is not inferior to its more noble relatives, but, unlike them, combines so much cruelty and rapacity with its courage as to deprive its disposition of that majesty popularly attributed to the King of Birds. The breeding season commences about March, and though each male has but one mate during its entire life, many and frequent are the battles that arise about the possession of these often very hard-earned partners. Count Wodzicki gives an interesting account of the pertinacity and fury with which these disputes are sometimes carried on. Two male Eagles, he tells us, that came under his own observation, fought almost incessantly, falling upon each

other with beak and claws, and rolling upon the ground until their feathers flew in all directions and blood flowed. During these encounters the female sat apart, and rewarded the victor by her caresses, with the utmost indifference as to which of the two should obtain her for his mate. After a fortnight spent in constant battles, the strongest bird remained for the time in possession of the field, but no sooner did the pair leave their eyrie, after rearing their young family, than the disappointed rival at once renewed his attacks with so much ferocity as to kill his adversary, after a short but severe struggle.

The eyrie of the Sea Eagle is a large structure, from five to seven feet in diameter, and from one and a half to two feet high, formed externally of branches as thick as a man's arm, and lined with twigs; the interior is rendered warm and soft with down plucked from the mother's breast. The brood consists of from two to four eggs, about three inches long; the shell is thick, rough, and coarsely grained, sometimes white without any markings, and occasionally spotted with red or brown. What period of time elapses before the nestlings escape from the egg is not yet known, but it has been ascertained that both parents assist in the work of incubation. The young do not leave the nest until from ten to thirteen weeks after their birth, and even then return to it at night; it is only as autumn approaches that they finally withdraw from parental care. The Sea Eagle is extremely shy, and therefore captured with great difficulty. In Norway small stone huts are erected for this purpose, outside which a piece of flesh, fastened to a string, is laid upon the ground; the other end of the string is held by a man within the hut, who no sooner perceives that his bait is taken, than he draws up the piece of meat, which the bird will not relinquish, and by this means usually succeeds in bringing the huge creature to close quarters, and killing it or making it prisoner. When caged the Sea Eagle soon becomes tame, and learns to distinguish its friends amid a crowd of strangers; indeed, so thoroughly does it accustom itself to its new life, that one with which we were familiar, having escaped from confinement, used to return every day to visit its companions, and was at last re-captured while perched upon their cage. These Eagles have been killed in various counties in England, and are not uncommon in the rocky parts of the western and northern counties of Ireland; they are said to be common in Scotland, and breed in the Hebrides, Orkney, and Shetland. Dr. Heysham, in his catalogue of Cumberland animals, says that they breed occasionally in the neighbourhood of Keswick and Ullswater.

THE AFRICAN SCREAMING SEA EAGLE.

The AFRICAN SCREAMING SEA EAGLE (*Haliaëtus vocifer*) is pure white upon the head, throat, nape, and upper part of the breast and tail; the mantle and quills are blueish black; the edges of the wings, and underside of the latter, are of a rich brownish red; the eye-rings, cere, and feet, light yellow; and the beak blueish black. In the young birds the plumage on the upper part of the head is blackish brown, mingled with white; the nape and back of the head, white, intermixed with brownish grey. The upper portion of the shoulders, and lower part of the back, are white, the feathers tipped with brownish-black spots; the front of the throat and upper part of the breast are white, streaked with brown; the rest of the lower portions of the body being entirely white; the quills are brown, and white at the root; the tail-feathers white, spotted and tipped with brown. The plumage is moulted many times before the bird appears in its full beauty. This species is about twenty-eight inches long; the wing measures nineteen and the tail six inches.

The Screaming Sea Eagle was first seen by Le Vaillant in South Africa, afterwards by other travellers in Western Africa, and by ourselves in the interior of that continent, where it appeared to live exclusively upon the banks of the Blue and White Nile. Le Vaillant, on the contrary, found it on the sea-coast, and only exceptionally near large rivers. It is, however, in the primitive forests of

Soudan that these beautiful birds are seen in their full glory, and, as they perch side by side among the foliage, afford a spectacle that cannot fail to rivet the traveller's attention, even should he have been long accustomed to the wonders of the African continent. In its life and habits this species resembles its congeners. It lives in pairs, each couple occupying a certain district, usually about half a mile in extent; over this they range from early morning till noon, when they rise into the air and enter-



THE WHITE-HEADED SEA EAGLE (*Haliaeetus leucocephalus*).

tain themselves with a variety of evolutions, meanwhile uttering yells that can be heard at a considerable distance. During the afternoon and evening, they sit side by side upon the branch of a tree occasionally bowing their heads, spreading their tails like a fan over the extremities of their wings, and screaming loudly should any strange object appear. Each couple has a favourite resting-place, to which they resort with unfailing regularity. At night they prefer to seek shelter in the inmost recesses of their leafy retreats. We found these birds so entirely without fear at the approach of man as to allow a shot to whistle past them without any indication of alarm: nevertheless, Le

Vaillant speaks of them as shy and cautious. The food of the Screaming Sea Eagle consists of fish and carrion, the former is obtained by swooping upon it from a considerable height; the prey is generally carried to the water's edge, and there devoured. We were on one occasion much amused by observing the manner in which a little bird (*Hya Egyptianus*) assisted in the demolition of a large fish that had been safely landed and stripped of its flesh by one of these Sea Eagles. The small



THE AFRICAN SCREAMING SEA EAGLE (*Haliaeetus vocifer*).

but courageous pillterer ran with the rapidity of lightning to the spot, seized upon a few scraps, and hurried away to devour them at a distance, repeating this operation till its hunger was appeased, the Eagle meanwhile turning its head from time to time to observe its manœuvres, but without making any attempt to interfere with its operations. Towards other birds of prey the Sea Eagle is far from exhibiting this amiable disposition, and usually succeeds in overcoming even the Vulture, should the latter interfere with its prey. In Soudan, the period of incubation commences with the rainy season. The eyrie is built upon high trees, or pieces of rock, and is formed of branches lined with some warm and elastic material; the brood consists of two or three purely white eggs.

When caged these birds soon become very tame, and accustom themselves so easily to our climate, that they may be allowed to fly about in the open air.

THE OSPREY.

The OSPREY, RIVER EAGLE, or FISH HAWK (*Pandion Haliaëtus*), although included in this extensive group, may be regarded as forming a connecting link between the Eagles (from which it differs in many essential particulars) and the Kites. In this species the body is comparatively short and powerful, and the head large: the beak rises from immediately beneath the cere, and terminates in a very large hook; the wings, in which the third quill is the longest, extend beyond the by no means short tail. The legs are very robust, and only covered with feathers above the heel; the tarsi are unusually strong, and protected by thick, small scales; the toes, the outermost of which can be turned either backwards or forwards, are short, and armed with short and powerful talons. The plumage of the Osprey is peculiarly smooth and compact; its prevailing colour is yellowish white, marked upon the head and nape with longitudinal blackish brown streaks, the feathers on these parts terminating in sharp points; the rest of the upper part of the body is brown, each feather being bordered with a lighter shade; the tail is brown, striped with black. The under portions of the body are white, or yellowish white; a dark streak passes from the eyes to the middle of the throat, and the breast is adorned either with a collar or shield-shaped patch of brown feathers, which are in some cases distinct, but in others scarcely visible. The eye is bright yellow, the cere and feet lead colour, while the beak and claws are of a brilliant black.

This bird is found throughout the entire continent of Europe, the greater part of Asia, and upon the rivers of Northern and Western Africa. Many naturalists are of opinion that the American Ospreys should be regarded as the same species, so very slightly do they differ from their European representatives, either in their appearance or manner of life. The River Eagle lives almost exclusively upon fish, and passes its life in such places as afford a plentiful supply; it only visits northern regions during the summer months, remaining throughout the rest of the year in warmer latitudes. During the course of its migrations, every piece of water over which it passes is subjected to close inspection, and even the finny inhabitants of the humblest pond are not safe from this most destructive and voracious marauder. Its eyrie is usually constructed upon a high tree, and formed of moss and twigs; the eggs, two or three in number, are greyish white, marked with pale yellowish red spots. Owing to the great strength of its wings, this bird is capable of flying to a very considerable distance from its roosting-place, to which, however, it always returns for rest or shelter. As soon as the mist has cleared away from the surface of the water, the business of the day commences, and about noon the Osprey may be seen careering through the air, preparatory to descending by a series of graceful evolutions upon the river or lake, over which it has hitherto sailed at a considerable altitude. At the first indication of a fish being about to rise, the observant bird arrests its progress, hovers for a moment above the spot, and then swoops down with great velocity upon its prey. All attempts to elude the fierce destroyer are useless, for even should the Osprey be completely submerged during the struggle, it rises again with ease, bearing its prize safely grasped by the back, shakes the water from its wings, and flies away with its victim to a neighbouring tree, or, if too heavy, drags it to the bank there to be devoured. The only exception to this mode of fishing is when the Osprey perceives an eel in the vicinity of the water, this it pounces upon, and transfixes with its "iron talons," and then, after tearing it to pieces, devours some portions of the body, entirely rejecting the entrails. Next to the Otter, this Eagle may be considered as the most destructive of all the many enemies to whose attacks well-stocked ponds and rivers are incessantly exposed, and for this reason it is regarded with great hostility by all cultivators of fish. In North America alone it

is treated with favour, being supposed, by a popular superstition, to bring luck to the district in which it builds its nest. With all varieties of swimming birds the Osprey lives upon the most amicable terms, but Crows, Swallows, and Wagtails pursue and harass it so perseveringly that it will often throw down its hardly-earned booty in order to escape from their unrelenting persecution. Traps baited with fish are employed in North America by those who wish to obtain these birds alive; so wary are they, however, that their capture is attended with great difficulty. When caged, even if supplied with plenty of fresh fish, they rarely survive imprisonment for more than a few months, and are, for this reason, numbered amongst the greatest rarities in our aviaries.

In England, as Yarrell informs us, specimens of this bird have been obtained in Surrey, Sussex, and almost every county on the north-east coast. Two or three have been killed in Durham, and they are said to be met with on the north-west coast of Scotland rather more frequently than elsewhere.

Sir W. Jardine says that in Scotland, "a pair or two may be found about most of the Highland lochs where they fish, and, during the breeding season, build on the ruined towers so common on the margins or on the insulated rocks of these wild waters. The nest is an immense fabric of rotten sticks—

‘Itself a burden for the tallest tree—’

and is generally placed, if such exists, on the top of the chimney, or, if this be wanting, on the highest summit of the building. An aged tree may sometimes be chosen, but ruins are always preferred, if near water. They have the same propensity for returning to a station with those of America, and, if one is shot, a mate is soon found and brought to the ancient abode. Loch Lomond, Loch Awe, Killchurn Castle, and Loch Menteith, have long been breeding places."

The KITES (*Mikú*) constitute a group of Falcons, many species of which are to be met with in all parts of the world. Of these birds it is almost impossible to speak in general terms, so very various is their appearance; and we must therefore confine ourselves to saying that they are for the most part slender in shape, with short necks, and small or moderate sized heads. Their wings are always long and pointed, and usually rather narrow; the tail varies considerably in length, but is generally very long and forked—really *short* tails are only exceptionally met with in this group. The foot, which is either long and weak or small and heavy, is invariably furnished with short toes; the beak is moderate, usually curving directly from its base, and hooked at the extremity, near which it occasionally presents a tooth-like appendage; the claws are slightly rounded and very sharp. The plumage is extremely soft and tolerably dense about the region of the head, forming in some instances a kind of ruff of long feathers which surround the ears, and, when spread out, materially assist the sense of hearing. To these characteristics we can only add that their colours are sometimes pale, and sometimes exceedingly bright. All the various members of this group are remarkable for the excellence of their flight, which differs essentially from that of any other birds of prey. Unlike the True Falcons, their movements are extremely calm and regular—indeed, they may be said to travel through the realms of air without any direct stroke of the wing, a peculiarity which occasionally gives a rocking motion to the flight of some species, the points of the wings being at such times held above the plane of the body. When upon the ground, however, their movements are by no means effected with equal facility—some species walk with ease, while others appear to progress with great difficulty. In all these birds the sense of sight is very highly developed, and such as possess the long feathers around the neck hear with great acuteness; of the delicacy of their sense of taste we cannot speak with any certainty. As regards intelligence, the Kites are decidedly inferior to other Falcons; they are cautious and persevering, cunning and inquisitive, extremely rapacious, but so destitute of courage

that we must stigmatise them as mere thieves, amongst whom the reckless deeds of daring often wrought by other members of the fraternity are entirely unknown; indeed, a Kite always prefers to follow in the wake of some other bird of prey, in order to obtain the refuse of its hardly-earned spoil, rather than engage in any struggle on its own account. Great diversity is observable in the mode of life adopted by the various species of Kites; the greater number live entirely apart, not merely from other birds, but from their own kind, while some fly about in pairs—only a few dwell together in small parties: these latter, however, are very sociable, and much attached to their companions. All are alike active and restless; from the first dawn of day till twilight has closed in they may be seen winging their way over the face of the country, occasionally pausing in their varied and beautiful gyrations, to descend slowly earthward and snatch the morsel they have espied from afar.

The food of the Kites consists principally of the smaller quadrupeds, defenceless birds, toads, fish, and various insects. Some species subsist entirely upon the latter diet, and hunt their prey in a manner more resembling that of the Swallow than the mode practised by other Falcons; but very few will devour carrion. On the whole, these birds must be regarded as useful to man, though some are very destructive to his property. The eyrie varies considerably in its construction; sometimes it is built upon rocks or in holes of walls, sometimes on church steeples, trees, bushes, or even the bare ground. The number of eggs varies from one to five; both parents assist in the work of incubation, and tend their young with great assiduity. When caged all the members of this group are easily tamed, and some attach themselves to their keepers, but they entirely lose their vivacity, and are quite unable to survive any lengthened confinement. Among the Bashkirs some species are trained to assist their masters in the chase.

THE SHORT-TAILED KITE.

The SHORT-TAILED KITE, sometimes called the MOUNTEBANK (*Holotarsus caudatus*), is a very remarkable bird, inhabiting the continent of Africa, from sixteen degrees north latitude as far as the Cape of Good Hope. In appearance it reminds us of an Eagle, and is recognisable by its short, powerful, compact body, short neck and large head. The wings (in which the second quill is longer than the rest) are of great length, the tail is unusually short, as are the tarsi; the latter are, however, very strong, and well protected by scaly plates. The toes are of medium size, and armed with slightly curved and blunt talons. The plumage is unusually rich in texture, and consists of large broad feathers, with which the head in particular is profusely covered. The coloration of the plumage in adult males is as striking as its general appearance; the head, neck, fore, under, and hinder parts of the body are of a beautiful, pale black; the entire tail and upper portion of the back are red. The exterior wing-covers vary from pale brownish red to cream colour; the primary quills are black, the secondaries and shoulder feathers grey, tipped with black, so that these latter form a black border to the wing, the lower side of which is of silvery whiteness. The eye is a beautiful brown, and glitters with a golden light; the back is reddish yellow at the base, and greyish blue towards the tip. The cere, and a bare place round the eyes, are blood red, spotted with reddish yellow. In the young birds the plumage is dark brown, usually deeper in shade on the back than it is beneath, where the feathers have a light greyish brown edge; the feathers upon the throat are light brown, and the secondary quills greyish brown. The eye is reddish brown, the beak, cere, cheek-stripes, and feet blue, the latter shaded with red. The length of the adult female is one foot ten inches, its breadth five feet ten inches; the wing measures one foot nine inches, and the tail not more than five inches. The male is not quite so large.

This remarkable bird, whose extraordinary appearance has caused it to be the subject of many strange superstitions among the natives of Africa, is found throughout the whole of that continent,

excepting its most northern portions: it lives principally in mountainous districts, but nevertheless constantly makes its appearance in all parts of the widely-extended plains; yet, notwithstanding the frequency with which this bird is seen by travellers, it is by no means easy to obtain possession of a specimen, as it usually soars so high when in flight as to be out of gunshot, and will often pass the entire day in thus sailing over extensive tracts of country; at noon, however, it may generally be found slaking its thirst at a pool of water, or taking a short nap upon a tree near some stream. The afternoon and early evening are spent in the pursuit of food, and it is only when darkness has



THE SHORT-TAILED KITE (*Helotarsus caudatus*).

fully closed in that the "Mountebank" seeks shelter for the night. Le Vaillant mentions having seen this species flying about in pairs, but we ourselves have always found it solitary; during the breeding season alone it is to be found associated with others of its kind in small parties. Speke tells us that the Short-tailed Kite is regarded by some of the African tribes with superstitious dread, its shadow being supposed to bring ill-luck, while others, on the contrary, venerate it on account of its imaginary powers of healing by means of rare medicinal roots which they imagine that it flies to a great distance to obtain. The latter notion has no doubt arisen from the fact that the snakes so frequently devoured by this bird have been mistaken for pieces of roots, when borne by their destroyer to its resting-place.

From the strange antics and remarkable appearance of this Kite, it is called by the Abyssinians "The Monkey of the Sky;" and those who have seen it alternately tumbling, gliding, rising, or falling through the air will own that the name is not ill applied. Only when on the wing can the beauty of the Mountebank be fully appreciated; while in the trees its appearance is most ungainly—the body is inflated till it looks like a ball of feathers, and the plumage hangs loose about the neck and face, the head being meanwhile turned about in all directions, after the manner of the Screech Owl. The sight of this bird, like that of other Kites, is very keen, and its powers of hearing excellent. In its wild state it is extremely shy, even towards its congeners; and though it will often engage in serious conflicts, is by no means courageous. In captivity it soon becomes exceedingly tame, and, unlike other birds of prey, quite enjoys being stroked. But little care, either as regards food or climate, is required to keep the Mountebank in health when caged, as it can endure almost any variety of temperature. Gazelles, lambs, sick sheep, young ostriches, and carrion are said to constitute its favourite food, but we cannot vouch for the truth of this statement, as our own observations have led us to the conclusion that this species subsists chiefly upon reptiles, and is equally destructive to snakes of all kinds, whether poisonous or not. When in pursuit of food of this description, it is immediately attracted by the conflagrations that frequently break out upon the vast plains of their native land, and will fly quite close down to the line of fire, snatching its victims as they vainly attempt to escape from the dense cloud of smoke in which they are enveloped; they will, no doubt, if driven by hunger, occasionally eat carrion. The period of incubation commences with the dry season, when, owing to the parched state of the ground, snakes are easily discovered among the burnt-up grass. The eyrie is usually built at the summit of a high tree, and the brood consists, according to Le Vaillant, of from three to four eggs, but we ourselves have never succeeded in finding more than two.

The GLIDING KITES (*Elanus*) are common in all parts of the world, with the exception of Europe, where they are very rarely met with. This group is composed of four species, resembling each other in an unusual degree. All have compact bodies and thick plumage; their wings, of which the second quill is longer than the rest, extend beyond the tip of the short, slightly excised, and by no means powerful tail. The feet are short, powerful, and only partially covered with feathers, the middle toe is longer than the tarsus, and all the toes are armed with very sharp, hooked talons; the beak, which is short and comparatively high, is much bent, and terminates in a long hook; the margin of the upper mandible bulges slightly outwards. The plumage is extremely silky in its texture, and resembles that of the Owl in the formation of its feathers.

THE TRUE GLIDING KITE.

The TRUE GLIDING KITE (*Elanus melanopterus*) is of a beautiful greyish blue upon the upper portions of its body, and white beneath; the brow and shoulders are black; the eyes a brilliant red; the beak black; the cere and feet orange. The young are brownish grey on the back, and light yellow, streaked with brownish yellow, on the under parts of the body; most of the feathers are surrounded by a white border. The length of the male is about thirteen and a half and its breadth thirty inches; its wing measures eleven and a half and its tail five and a half inches. The female is somewhat larger. This Kite principally inhabits such tracts of country as are diversified by woodlands and pastures, and usually avoids extensive forests; with this exception, it is found throughout the whole of North-eastern Africa, and is particularly numerous in Egypt. It always lives in pairs, never flying about in parties except when engaged in instructing its young. The couples, however, live close to each other, and may, therefore, often be seen apparently enjoying a social excursion, when in fact, each family is entirely regardless of its neighbours. In its habits the Gliding Kite bears

some resemblance both to the Buzzard and the Owl, and is easily recognised either as it flies with the tips of its wings raised much above its body, or when seen quietly perched and glowing with dazzling brilliancy in the rays of a tropical sun. If in pursuit of prey, it glides along at a considerable height above the ground, and, when it descries a victim, hovers for a few moments before swooping heavily down with wings close to its sides; should it be a mouse, or a grasshopper that is thus hastily seized, the former is carried off to a tree to be devoured, the latter immediately swallowed. Young birds are often eaten, but mice, we believe, constitute its principal subsistence. So entirely is this species free from any dread of man, that in Egypt it flies about in the fields close to the native labourers, and will even build its nest upon such orange-trees as are constantly visited by the gardener; it soon, however, becomes cautious if pursued, and learns to keep at a very respectful distance from the European gun. In its relations to such of its feathered companions as are small or harmless, the True Gliding Kite is quite inoffensive, but it pursues the larger birds of prey with loud cries whenever they appear. The voice of this species resembles that of the Tree Falcon; the notes are, however, more prolonged, almost like a whistle, and can be heard at a great distance. In Egypt the period of incubation takes place in the months that correspond with our spring, and in Soudan at the commencement of the rainy season: we have twice found young birds as early as March. The nests were flat in shape, and placed upon low, thickly-foliaged trees, at not more than twenty feet above the ground; they were built of small twigs, and lined with fine fibres and blades of grass, over which was laid a snug bed of wool and mouse's hair. The eggs vary in colour, some being greyish white, thickly but irregularly spotted, and streaked with reddish brown, insomuch that the whitish colour of the shell is scarcely visible. Jerdon mentions these eggs as being pure white; their length is one and a half inches, and their diameter, in the thickest part, about fourteen lines. If taken young from the nest, the Gliding Kite is capable of being made very tame, and soon accustoms itself to life in a cage.

The HOVERING KITES (*Ichthyophaga*) are American birds, very nearly allied to those we have just described. This group consists of but two species. In these birds the wings—in which the third quill is longer than the rest—are long and pointed; the tail of medium length, and slightly sloping; the feet powerful, but of no great size; the toes are comparatively short, and armed with round and very decidedly curved talons; the beak is short, nearly as broad as it is high, and furnished at its base with rudimentary tooth-like appendages; the plumage is thick and soft, and the individual quills of moderate size.

THE MISSISSIPPI KITE.

The MISSISSIPPI KITE (*Ichthyophaga mississippiensis*) is about fourteen inches long and thirty-six broad. The head, nape, and entire upper portions of the body are blueish white; the back, wings, and tail, black, enlivened by a greenish gloss; the secondary quills are tipped with greyish white, the outer web of the primaries being of a brilliant red; the eye is deep red; the beak, and a place round the eye, black; the foot is bright red. "When spring arrives," says Audubon, "the Mississippi Kite extends its migrations as high as the city of Memphis, on the noble stream whose name it bears, and along our eastern shores to the Carolinas, where it now and then breeds, feeding the while on lizards, small snakes, and beetles. At times, congregating to the number of twenty or more, these birds are seen sweeping round some tree, catching the large locusts which abound in those countries at an early part of the season. The Mississippi Kite arrives in Lower Louisiana about the middle of April, in parties of five or six, and confines itself to the borders of deep woods, or to those near plantations, not far from the shores of the rivers, lakes, or bayous. It never moves into the interior of the country; plantations lately cleared, and yet covered with tall, dying, girted trees, placed near a creek or bayou, seem to please it best."

"Its flight is graceful, vigorous, protracted, and often extended to a great height, the Fork-tailed Hawk being the only species that can compete with it. At times it floats in the air as if motionless, or sails in broad, regular circles, when, suddenly closing its wings, it glides along to some distance and renews its curves. Now it sweeps, in deep and long undulations, with the swiftness of an arrow, passing almost within touching distance of a branch on which it has observed a small lizard, or an insect it longs for, but from which it again ascends disappointed. Now it is seen to move in hurried zig-zags, as if pursued by a dangerous enemy, sometimes seeming to turn over and over like a Tumbling Pigeon; or it may be observed flying round the trunk of a tree to secure large insects, sweeping with astonishing velocity. While travelling, it moves in the desultory manner followed by Swallows, but at other times it is seen in company with the Fork-tailed Hawk, at a great elevation, among the large flocks of Carrion Crows and Turkey Buzzards, dashing at the former and giving them chase, as if in play, until these cowardly scavengers sweep downwards; it then abandons this apparently agreeable sport to the Hawks, who now continue to gambol undisturbed. When in pursuit of a large insect or a small reptile, this Kite turns its body sideways, throws out its legs, extends its talons, and generally seizes its prey in an instant. It feeds while on wing, apparently with as much ease and comfort as when on the branch of a tall tree. It never alights on the ground: at least, I have never seen it do so, except when wounded, and then it appears extremely awkward. It never attacks birds, or quadrupeds of any kind, with a view of destroying them for food, although it will chase a fox to a considerable distance, screaming loudly all the while, and soon forces a Crow to retreat to the woods."

The eyrie of the Mississippi Kite is always placed at the summit of a lofty tree, the magnificent white oaks and magnolias with which the Southern States are so plentifully adorned being usually preferred. The nest is very simple in its construction, resembling that of the Common Crow; it is composed of twigs thrown lightly together, and lined with Spanish moss, dry leaves, and the bark of the wild vine. The eggs, two or three in number, are round and of a green colour, thickly covered with black or dark chocolate spots. Both parents assist in the work of incubation, and protect their young with so much ardour that they will even attack men, should they attempt to molest the little family. The nestlings when first fledged resemble their parents, and attain their full beauty of plumage before their first migration. The capture of these birds is not difficult, for, though they fly at a very considerable height, they are by no means shy, and, when perched at the summit of a lofty tree, are easily brought down with the gun.

The CROOKED-BILLED KITES (*Cymindis*) are recognised by their lengthy bodies and unusually long and pointed wings, in which the fourth quill is the longest; the tail is of considerable length, composed of broad feathers, and rounded slightly at its tip; the feet are short and weak, the tarsi slender, and partially covered with feathers on the upper side; the toes are feeble, and furnished with thin, but slightly curved and very long talons; the beak is high, and much compressed at its sides; the culmen is narrow, and the margin straight; the upper mandible extends considerably beyond the under portion of the beak, and terminates in a hook; the plumage is very rich, and composed of large feathers; its markings resemble those of the Hawks.

THE BUZZARD KITE.

The BUZZARD KITE (*Cymindis uncinatus*) is sixteen inches in length and thirty-three inches broad; the wing measures eleven and the tail seven inches. The plumage of the adult male is uniform light grey, shaded with blue, somewhat lighter on the lower parts of the body; the wing and tail-feathers are of the same pale shade, striped with deep grey—a broad white line passes over the base of the

tail-feathers ; the eye is of a pearly hue ; the upper mandible blackish grey, the lower whitish yellow ; the cere, cheek-stripes, and a spot near the eyes, are greyish green ; the margin of the mouth yellow ; the feet orange colour. The female is of a paler grey, with grey and black waved markings on the wings ; the under part of the body is striped with white ; and below the broad white streak upon the tail passes a succession of alternate black and grey lines. The back of the young bird is greyish brown, each feather being edged with red ; the body underneath is light reddish yellow, transversely striped with rust-red ; the primary quills are blackish brown, adorned with light streaks, and bordered with white. When seen from above, the tail exhibits two yellowish grey stripes ; beneath, it presents lines of reddish yellow, and is tipped with the same shade.

We learn from the Prince von Wied, and other authorities, that these birds are found throughout a large portion of South America. They are most numerous on the outskirts of forests, more particularly of such as are in the immediate vicinity of the settlements of the planters ; and lead for the most part a solitary life. Their appearance is very beautiful, and their flight varied and rapid. The stomachs of such as the Prince von Wied shot were found to contain insects and snails, but they will also eat birds and small quadrupeds. In disposition this species is courageous and fierce. The eyrie is built upon lofty trees, and is generally quite inaccessible.

THE SYAMA.

The SYAMA or BAZA (*Baza lophotes*) is the most remarkable of the many species of Kites with which we are acquainted. Its length is from thirteen to fourteen inches, its breadth thirty inches ; the wing measures nine, and the tail five inches. The beak of this bird is small, much curved and furrowed at the sides ; the upper mandible is furnished with two sharp teeth on each side, and the lower one has three or four similar appendages towards the tip. The wings are of moderate size, the third quill being longer than the rest ; the tail is square, and of medium length ; the tarsi are short, thick, and feathered on the upper side ; the toes short, the talons small, and very much curved. The plumage is rich, and forms a crest upon the head ; the upper portions of the body and hose are of a brilliant greenish black, as are also the tail and wing-covers ; the outer web of the secondary quills is a beautiful nut-brown, the feathers on the shoulders, and some of those on the wing-covers, are white, spotted with brown ; these form an uninterrupted white line across the entire wing. The lower parts of the body are white, with five or six nut-brown bands on the sides of the belly. The quills of the wings and tail are of an uniform pale blueish tint.

Jerdon informs us that this bird is found throughout the whole of India ; it is, however, scarce in the southern provinces and near Calcutta, but occurs more frequently in the region of the lower Himalayas. It subsists principally upon insects, which it procures from within the recesses of the forests. The Syama is seldom seen in flight ; the crest is usually carried erect. These scanty particulars comprise all the information respecting this species that has as yet been obtained.

THE TRUE KITES.

SUCH of the True Kites as can be united into one group are recognisable by their very lengthy body, small head, feeble beak, large wings, and long, more or less forked tail. Two species of this family are known to breed in Germany, and others are met with in different parts of Europe.

THE BLACK KITE.

The BLACK KITE (*Hydroictinia atra*) inhabits the southern provinces of Germany, Russia, and Central Asia, as far as Japan. This species is from twenty-one to twenty-three inches long, and from

forty-eight to fifty broad; the wing measures sixteen, and the tail from eleven to twelve inches. The distinguishing characteristics of this bird are its somewhat delicate beak, furnished with well developed, tooth-like appendages, and terminating in a long hook; and the shape of its wings, in which the fourth quill is the longest, and the first shorter than the seventh; its tail is, moreover, black and forked. The plumage, composed of narrow feathers, is of a dirty white upon the head, throat, and neck, streaked longitudinally with dark greyish brown; the breast is reddish brown, varied with still darker markings; the feathers on the breast and the hose are rust-red, with black shafts; those on the back, shoulders, and wing-covers are dark brown, with a narrow light border; the upper wing is rust colour, each feather being edged with brownish white, and spotted with black on the shaft. The quills, which are tipped with brownish black, are whitish upon the inner web; the tail is brown, and decorated with from nine to twelve narrow brown and black lines; the beak is black, the cere yellow, the eyes brownish grey, and the feet orange. The plumage of the young is of an uniform brown, the cere and feet of a paler yellow than those of the adult birds; the beak is black, and the eyes dark brown.

The Black Kite is replaced in Africa and South-western Asia by a species known as the Parasitic Kite, for which it is frequently mistaken. The former is very commonly met with in Russia and the eastern parts of our continent, where it frequents such woodland districts as are in the vicinity of water, to which it flies daily in search of food, returning at night to sleep upon the trees. The season for migration commences about October; but this bird seldom journeys farther south than Egypt, and returns to its summer quarters in the month of March. The Black Kite is in many respects highly endowed, though by no means worthy to be classed among the nobler Birds of Prey. Its flight is light, hovering, and capable of being long sustained; when upon the ground, its movements are also more graceful than those of most of its congeners, the body and head being held erect. The sight of this species is remarkably acute, and its other senses by no means deficient; its instincts are keen, yet, in spite of these many gifts, the Black Kite must be regarded as one of the most audacious and shameless beggars to be found among the feathered tribes. Too lazy and cowardly to kill its own prey, it devotes its life for the most part to theft, stealing habitually the quarry other birds have obtained, and following and tormenting them with such pertinacity, that at last, out of sheer weariness of its importunities, they throw down the coveted prize; it will, however, destroy rats, mice, and other small quadrupeds, and frequently captures fishes during the spawning season.

Notwithstanding that the cowardice of this bird is so great that a clucking hen could scare it away, it manages to render itself a most troublesome visitor to the farmyard, where its cunning and adroitness stand in the stead of nobler qualities, and enable it, unobserved, to steal many a fat chicken or duckling. When other food is scarce it will consume frogs, and is always attracted by carrion. The breeding season commences about April or May, and is inaugurated by a series of graceful evolutions through the air, in the performance of which both male and female take a share, the former continuing frequently to soar aloft for the entertainment of his mate during such time as family cares confine her to the nest. The eyrie is placed upon a very high tree, and most artistically constructed of dry twigs, with some soft and elastic material, such as moss, hay, shreds of cloth, or even cuttings of paper. The brood, which consists of three or four yellowish or greyish white eggs, either marked or spotted with brown, is tended by the female with great care and affection. The young are reared upon mice, frogs, and occasionally small birds; they remain for a long time in the nest, and even some weeks after leaving it are nourished and instructed by their parents; when this period of tuition is over they separate, each bird going its own way, and beginning life for itself. Towards autumn they all again assemble, previous to setting forth upon their winter migrations. When in captivity the Black Kite soon learns to attach itself to those that feed it.

THE GOVINDA.

The GOVINDA (*Hydroictinia Govinda*), as the Indian species is called, is found, according to Jerdon, throughout the whole of Hindostan, up to an altitude of 8,000 feet, and is one of the birds commonly met with in India, where it frequents all large towns or populous places, and proves itself a most bold and impudent thief. It will follow travellers in hopes of being able to steal their food, and even snatch a dainty morsel from the table, under the very eyes of its lawful owner. It not only drives its own species and other birds from a meal that has caught its fancy, but often pounces upon fine full-grown Hens and Parrots. Bligh informs us that it will also eat Crows. According to our own observations, the Govindas often congregate in large companies, on which occasions they seem to come together from all parts of the neighbourhood, to hold, as it were, a kind of "palaver," and compare their experiences. The Govinda pairs about Christmas, and breeds from January to April. The nest is placed upon trees or high buildings, and is formed of twigs or branches, lined with some soft material. The eggs are from two to three in number.

THE PARASITE KITE.

The PARASITE KITE (*Hydroictinia parasitica*) is found in large numbers throughout the whole of North-eastern Africa, and is a constant frequenter of the banks of the Nile and shores of the Red Sea.

Unlike most of its congeners, this bird always seeks the society of man, and, as its name indicates, obtains its principal means of subsistence, not by its own exertions, but by unceasing thefts and petty pilfering; indeed, amongst the many troublesome members of the feathered tribes by which African towns are visited, the Parasite Kite stands pre-eminent for audacity and persevering cunning. Perched upon a lofty palm-tree or slender minaret, it surveys the people that pass beneath with so keen and appreciative an eye, that we have been sometimes almost tempted to imagine that it was actually capable of understanding what the various signs of daily life indicated, and had made the habits of mankind a subject of most sagacious study. Is a sheep led through the streets on its way to the slaughter-house, this bird is sure to follow in the wake, and obtain more than its share of the pickings. Woe to the buyer in the market-place who may happen to accost a neighbour, in momentary forgetfulness of the basket that contains his dinner! In the twinkling of an eye, the watchful thief has swooped noiselessly down, and is off with the prize before the unlucky owner has had time to turn his head. All attempts to frighten the marauder into dropping its booty are upon such occasions entirely useless. Fear of man it has none, and will snatch a tempting morsel from his hand with as much coolness as it exhibits in defrauding its congeners of their hardly-earned repasts. The nobler Birds of Prey appear thoroughly to despise the miserable thief who is constantly hovering about in order to harass them, and at once throw down their prey, as if in contempt of the wily intruder. We have seen the Peregrine Falcon thus cast away four different captures in the course of a few minutes, each time returning to obtain a fresh supply for its own breakfast. The Parasite Kites are usually seen flying about in flocks numbering some fifty or sixty birds; it is only during the breeding season that they live in pairs. The eyrie of this species is built upon a high tree or steeple, and almost every minaret in Cairo is decorated with several of these structures. The eggs, from three to five in number, are laid about February; by the end of May the young are fully fledged, and quite capable of stealing on their own account. The parents exhibit great attachment and courage in their care of their family.

The general appearance and size of the Parasite Kite corresponds very closely with that of the Black Kite, except that the plumage is somewhat lighter than in that bird, and the beak yellow. This species is called "Hitaie" by the Arabs, that word being supposed to represent its cry, of which the

first syllable "hi" is very sharp, and the latter much prolonged. This Kite has been the subject of many amusing Eastern fables.

THE RED OR ROYAL KITE.

The RED or ROYAL KITE (*Milvus regalis*) differs from those of its congeners already described in the comparative strength and height of its beak, which is, moreover, but slightly hooked at its extremity. The first quill of the wing is as long as the seventh; the tail is long, broad, and much forked. The length of the Royal Kite is about two feet, its breadth four and three-quarters: the



THE PARASITE KITE (*Hydroicinia parasitica*).

wing measures one foot and a half, and the tail fourteen inches. The female is about three inches longer and broader than her mate. The plumage of this species consists of broad feathers of a rust-red colour, spotted and marked upon the shafts with blackish brown. The head and neck are white, streaked longitudinally with brown; the points of the wings are black, the tail is rust colour, striped with dark brown. In the young birds the head is yellowish white, spotted with brownish red, and all the feathers on the under parts of the body have a light edge.

The Royal Kite inhabits all the level tracts of the European continent, from the south of Sweden to Spain, and from thence to Siberia, but only appears in mountainous districts, during the course of its

migrations. They usually make their appearance in Europe about March, and leave for warmer climates in October; when the winter, however, has proved exceptionally mild, some stragglers have been known to remain with us throughout the entire year. The Royal Kites live in pairs, except when about to migrate, at which time they congregate in large parties containing from fifty to a hundred, which fly about in search of food during the day, and pass the night upon trees. These wandering bands extend their flight as far as North-western Africa, but we have rarely seen them in Egypt.

In times not very remote these Kites seem to have played in England the part of scavengers, much in the same way as the Parasite Kite and Govinda now do in India, for Pennant informs us that in the days of Henry VIII. they flew fearlessly about the streets of London, and cleansed them of the mass of filth, which must otherwise have tainted the air with poisonous vapours. To kill one of these feathered scavengers was, in that reign, a punishable offence.

The Royal Kites are indolent and cowardly; they frequently hover for a quarter of an hour in the air without any perceptible movement of the wings, merely steering their course by means of their broad tail, by the aid of which they can likewise soar to an enormous height. When upon the ground their gait is extremely awkward, consisting rather of shuffling hops than of regular steps. In disposition they resemble the species we have already described. Their voice is monotonous and somewhat bleating in its tone, but this sound is varied during the breeding season by a tremulous note, sometimes employed at other seasons to express pleasure or contentment. They live upon small quadrupeds, unfledged birds, snakes, toads, frogs, grasshoppers, beetles, and worms; and though they occasionally annoy the farmer by stealing a chicken, or the sportsman by pouncing upon a young hare, these trifling offences are not worth speaking of when we consider the valuable services rendered by them, for without their most timely aid entire crops would be destroyed. Dozens of mice are often devoured by one Kite in the course of a single day, and incalculable hosts of noxious insects are also consumed by these active but much-reviled friends of the farmer and gardener. When about to breed they prefer taking possession, if possible, of a Falcon's eyrie or Crow's old nest, but should this be impossible, they build much in the same manner as the Kites above described. The eggs, usually two, sometimes three in number, are laid about April, and are white, spotted with red. The female alone broods, and her mate busies himself in procuring food. The young are reared like others of their congeners. The Royal Kite is easily tamed, and, according to our own experience, may be considered as the most interesting and pleasing of all caged Birds of Prey.



THE RED OR ROYAL KITE
(*Milvus regalis*).

THE SWALLOW-TAILED KITE.

The SWALLOW-TAILED KITE (*Nauclerus furcatus*) is a most beautiful member of this group, belonging to Southern and Central America; many of this species have, however, from time to time found their way to Europe, and it may therefore be considered as in some measure belonging to our continent. This remarkable bird is distinguished by its powerful body, short neck, and small but powerful head. Its wings, which in shape resemble those of the Swallow, are long, and gradually pointed; their third quill being longer than the rest. The tail is very long, and so deeply forked that the exterior feathers are twice as long as those in the centre; the beak, which is of no great size, and

rather shallow, curves gently from its base, and terminates in an abrupt hook ; the margins are straight but furrowed. The feet are small and powerful, the toes short, and armed with sharp and very crooked talons. The plumage is soft, and composed of large feathers. The entire coat of the adult bird is white, if we except the mantle and tail, which are black, but gleam with a metallic lustre ; the inner web of the secondary quills is white towards the tip. In young birds the feathers upon the nape and back of the head have black or very dark shafts, the plumage upon the back is grey and lustreless, the lower wing-covers are also tipped with grey, the exterior secondary quills are pure white. The eye is dark brown, the beak black, the cere blueish grey, the feet are greenish blue, and the claws horn colour. The male is somewhat smaller than its mate, from which it is also recognisable by the pure white of the rump and the brilliant black of the wings. The length of this species is about twenty-three inches, its breadth fifty inches ; the tail measures sixteen, and the longest tail-feathers twelve inches.

The Swallow-tailed Kites inhabit all parts of South America, from the South of Brazil to the Southern United States, only appearing, however, in the latter region during the summer months.



THE SWALLOW-TAILED KITE
(*Nauclerus furcatus*).

According to Audubon they visit Louisiana and Mississippi about April, and depart in September. Some few penetrate as far as New York and other Northern States, but they are merely stragglers. These Kites generally live in large flocks, that pass their time in sweeping and hovering over the face of the country, or perching sociably amongst the branches of trees, which, when thus occupied, present a spectacle not easily forgotten. "The flight of this elegant species of Hawk," says Audubon, "is singularly beautiful and protracted ; it moves through the air with such ease and grace that it is impossible for any individual who takes the least pleasure in observing birds not to be delighted with the sight of it whilst on the wing. Gliding along by easy flapings, it rises in wide circles to an immense height, inclining in various ways its deeply-forked tail to assist the

direction of its course, dives with the rapidity of lightning, and, suddenly checking itself, re-ascends, soars away, and is soon out of sight. At other times a flock of these birds, amounting to fifteen or twenty individuals, is seen hovering around the trees. They dive in rapid succession amongst the branches, glancing along the trunks, and seizing in their course the insects and small lizards of which they are in quest. Their motions are astonishingly rapid, and the deep curves which they describe, their sudden doublings and crossings, and the extreme ease with which they seem to cleave the air, excite the admiration of him who views them while thus employed in searching for food."

Their food, we are told, consists principally, indeed, almost exclusively, of insects. Audubon, however, states that they will also devour lizards and snakes. When in pursuit of insects they hunt after the manner of Swallows, only with this difference, that, unlike those birds, they seize the prey with the foot. As yet all efforts to keep this beautiful species for any length of time in a cage have proved unavailing, owing to the difficulty of providing suitable food.

The CHELIDOPTERI represent a group of African Kites, that resemble the above-described species as regards their general appearance, but are readily distinguishable by the different construction of their feet and wings.

THE DWARF SWALLOW-TAILED KITE.

The DWARF SWALLOW-TAILED KITE (*Chelidopteryx Riocouri*) is of a greyish blue colour upon the upper part of the body, deeper in shade upon the head and shoulders than on the wings and tail. The tips of the tail-feathers of the second order are white, the brow, bridles, cheeks, and under portions of the body pure white; the lower wing-covers and beak are black, and the feet yellow. In length this species measures from thirteen to fourteen inches, of which seven belong to the tail; the wing is about nine inches long. Nothing is known of this rare bird, except that it is an inhabitant of the extensive steppes of Central Africa, and appears regularly in Kordovan. We ourselves have never seen it, except when soaring high in the air, only occasionally coming low enough to be recognised by the naked eye.

The FIELD KITES, or HARRIERS (*Circi*), are birds of moderate size, characterised by their elongated bodies, long, slender wings, broad but not large tails, long, weak, short-toed feet, and small, but very decidedly-curved beaks, hooked at the extremity, and furnished with blunt denticulations. In some species the feathers on the face are prolonged into a disc, and in all, the third and fourth quills of the wings exceed the rest in length. The plumage is soft and very lax in the region of the neck. The various members of this group belong rather to the earth than to the air, in which they seldom rise to any considerable elevation: their days are passed in hovering over the surface of fields, meadows, and pools, in search of birds, small quadrupeds, toads, and fish: they, however, only capture such prey as either swims or runs on the ground, and never molest birds upon the wing.

This family has been divided into two groups, known respectively as MEADOW KITES (*Strigiceps*) and MARSH KITES (*Circus*).

The MEADOW KITES (*Strigiceps*) are recognisable by the clearly-defined disc upon the face, and by the great variety observable in their plumage at different ages, or according to the sex.

THE BLUE KITE, OR HEN HARRIER.

The BLUE KITE, or HEN HARRIER (*Strigiceps cyaneus*), is about seventeen inches long, of which eight and a half belong to the tail; its breadth is forty inches, and the length of the wing fourteen inches. The plumage of the adult male is light greyish blue above, and white beneath; the nape is striped with brown and white; the first quill is blackish grey, the five next are black, and only grey or white towards the root, the rest are entirely grey. The tail is ornamented with a few dark spots. The plumage of the female is yellowish brown, with white lines over the eyes, and reddish yellow borders to the feathers on the hinder part of the head; the under part of the body is of the latter colour, streaked longitudinally with brown. The pupil of the eye, cere, and feet, are lemon yellow, and the beak greyish black. The young resemble the mother.

THE KITE OF THE STEPPES, OR PALLID HARRIER.

The KITE OF THE STEPPES, or PALLID HARRIER (*Strigiceps pallidus*), is about sixteen inches and a half long and thirty-eight and a half broad; its tail measures eight and a quarter and wing thirteen inches. In the general coloration of its plumage this bird differs but little from the species last described, though it is somewhat paler in tint, being of a leaden colour above and pure white upon the lower portions of its body; the tail and wings are distinctly striped with grey, and the wings tipped with black. The adult female is brown; the individual feathers of the mantle edged with a light reddish shade; the under side is pale reddish yellow, streaked with a darker tint. The young are

recognised by the uniform colour of their lower parts. As a distinguishing mark between the Blue Kite and this bird we will add that in the former the fourth quill, and in the latter the third, is longer than the rest.

THE MEADOW KITE, OR ASH-COLOURED HARRIER.

The MEADOW KITE, or ASH-COLOURED HARRIER (*Strigiceps cineraceus*), must be regarded as representing a distinct group (*Glaucopterix*). This species is seventeen inches long and forty-two inches broad; the wing measures about fourteen inches, and the tail eight and a half. Its wings are very long, and the facial discs but slightly developed. The head, mantle, throat, and upper part of the breast are in the adult male greyish blue; the feathers upon the belly and legs are white, with reddish shafts. The primary quills are quite black, and the secondaries light greyish blue, marked with irregular black streaks, which form a well-defined border on the outer wing. The tail is ornamented with four or five dark stripes. The adult female and young male are brownish grey, the top of the head being red, striped with black. The lower portions of the body are white, marked indistinctly with reddish spots. The very young birds are of a spotless rust-red beneath, and above are covered with dark brown feathers, these latter being tipped with a reddish shade; the eye is almost surrounded by a large dark brown patch, under which is a white spot; the rump is white, the wing and tail feathers marked with irregular dark spots. The eye of the adult male is bright yellow.

The BLUE KITE, or HEN HARRIER, the first of the three species above described, is found throughout the greatest part of Europe and the whole of Central Asia; it seldom, however, wanders very far south, appearing but rarely in India, and being, we believe, unknown in Africa, where it is replaced by

The PALLID HARRIER (*Strigiceps pallidus*), which is met with in large numbers from Egypt to the western coast of Africa, but seldom makes its appearance in Southern Europe.

The ASH-COLOURED HARRIER (*Strigiceps cineraceus*), on the contrary, belongs to the South-eastern countries of the European continent, and the greater part of Asia; it is also common in America. All these three species so closely resemble each other in their habits and mode of life, that we shall confine ourselves to a description of the Blue Kite, merely adding that the names Kite of the Steppes and Meadow Kite, given to the other two, indicate the districts they principally frequent. All are active, bold, and cunning: their flight, which is quiet and uncertain, often consists of a mere hovering in the air; at such times the tips of the pinions are held above the body, and the tail is slightly spread. This peculiarly irregular mode of progression renders it impossible to mistake these Kites for any of their congeners if seen when upon the wing; they usually fly very near the ground, and but rarely soar to any considerable height. According to Naumann they avoid lofty trees, and prefer to perch upon stones or hillocks, sleeping at night amongst grass, reeds, or corn. Our own observations have proved that this peculiarity does not apply to the Pallid species, which both sleeps and perches during the day among the branches of trees, never, however, selecting such as are at the summit, but seeking a resting-place as near the trunk as possible, much after the manner of the Owls. When upon the ground, these Kites run and hop with so much adroitness and activity as frequently to succeed in capturing a mouse, whilst the latter is endeavouring to save its life by speed. The early part of the day is spent in procuring food; at noon they rest, and then resume their labours until the shades of evening have fully closed in: owing to the extreme keenness of their sight and hearing, they are capable of hunting almost in the dark, and can often detect their prey by the sense of hearing alone. In disposition they are so inquisitive that almost any

attractive object will bring them down to investigate it. Of their courage we cannot speak in flattering terms, but we have known them join forces with the Crows in order to attack one of the larger tyrants of the air. When caged they are easily tamed; we do not, however, recommend them for domestication. Their voices are not loud, but penetrating. All these birds are eminently useful to man, as they destroy enormous numbers of mice as well as frogs and other reptiles; but they also most unmercifully devour eggs and young birds during the breeding season. We have never seen them touch carrion. The period of incubation commences with the spring. The nest is placed among growing grass or reeds, the parents prudently waiting until it is safely concealed before the eggs are deposited. Naumann describes the eyrie as being a mass of dry twigs, grass, potato stalks, and similar materials, lined with hair, feathers, or moss. Occasionally the nest is merely formed of a



THE REED KITE OR MARSH HARRIER (*Circus rufus*).

little straw or grass, rudely matted together. The brood consists of four or five eggs, round in shape, and having delicate shells; these are of a greenish white colour, sometimes marked with very tiny spots and streaks, but are entirely without lustre. The young are reared upon mice, small birds, frogs, and insects.

THE REED KITE, OR MARSH HARRIER.

The REED KITE, or MARSH HARRIER (*Circus rufus*), closely resembles the birds above described in its general construction, but its beak is longer and more powerful, and its tarsi more robust; the facial disc, moreover, is only slightly indicated. Its length is twenty-one inches, of which ten belong to the tail; its breadth varies from forty to fifty inches. The female is from one and a half to two inches longer, and three broader than her mate. The plumage of the adult male is often much variegated. The top of the head and brow are brown; the cheeks and throat are covered with

pale yellow feathers, having dark shafts; the upper part of the breast is yellow, streaked with brown, and the feathers on the under part of the body are rust colour, tipped with a light shade; most of the secondary quills, and all the tail-feathers, are grey. In the female the top of the head and nape are yellow, striped with brown, the rest of the mantle is reddish brown; the shoulder and upper wing-covers of the axillary region are yellow, streaked with brown; the throat is yellow, the cheeks and fore part of the body reddish brown. The young are usually dark brown, with yellow heads, but vary much in their plumage. The feet of all are pale yellow; the beak is black; the eye of the adult bird yellow; that of the young, nut brown. It is at present uncertain to what countries the habitat of this species is restricted, as it has been occasionally met with in many parts of the world. Marshy districts afford its favourite retreats, and it is constantly seen in the vicinity of water or bog land, carefully avoiding high, dry plains, or mountainous regions. During the winter this Harrier is one of the commonest birds of India and Egypt. It reaches Europe about March, and at once takes possession of its appropriate haunts. In its mode of life and habits it so closely resembles the Blue Kite that further description would be mere repetition. Its food consists principally of water and marsh birds, frogs, fish, and insects; according to Jerdon, it will also eat shrew mice and water rats. Large eggs it opens with great dexterity, small ones are devoured whole; with Swan's eggs it appears to be unable to grapple, for Naumann mentions having seen a Reed Kite turning them over, and vainly endeavouring to get at the interior: it is no doubt from fear of this voracious enemy that many birds are at such pains to conceal their nests. From the breeding season until autumn this species pursues all kinds of Water Fowl with insatiable avidity; it is in vain that the quarry endeavours to elude pursuit by diving; old Ducks alone seem capable of chasing away the unwelcome intruder, who, however, revenges itself for their temerity, by destroying all the unprotected ducklings that stray into its vicinity. In India this bird often exhibits great hardihood; indeed, it is not uncommon for it to seize upon a Snipe at the very moment that the sportsman is about to fire. The eyrie is formed in beds of reeds, and is a mere rude mass of flags, rushes, or similar materials carelessly heaped together. The brood consists of from four to six large greenish-white eggs, which are hatched by the female alone, who is meanwhile entertained by the antics of her mate; the latter amusing himself by performing every conceivable kind of vagary in the air, accompanying his motions by alternately lively and lugubrious cries for whole hours at a time. The young are tended with much care by both parents. As may be imagined, the enemies of the Reed Kite are neither few nor backward in their attacks; the flocks of Crows alone must occasionally make its life wearisome, for they allow no opportunity of annoying or pursuing it to escape their vigilance. In some parts of Asia the Reed Kite is trained to hunt Ducks; but in Europe, as far as we are aware, this has never been attempted.

Several species of Kites inhabiting New Holland, are distinguished from those already described by their plumage. These birds have been grouped together under the name of SPOTTED KITES (*Spilocircus*).

JARDINE'S SPOTTED KITE.

JARDINE'S SPOTTED KITE (*Spilocircus Jardini*) is about the size of the Reed Kite. The feathers upon its cheeks, ear-covers, and the top of its head are nut brown, streaked with blackish brown upon the shafts; the face, breast, and back are dark grey; the under side of the wings, belly, and legs are reddish brown; most of the feathers upon the wings and lower part of the breast are marked with round white spots upon each side of the shaft; the quills are dark, and the tail-feathers striped alternately with brown and grey. The beak is grey at the base, and black at its tip; the feet are

yellow, and the eyes orange. The young birds are of an uniform dark brown upon the back, and striped instead of spotted on the lower parts of the body. Gould informs us that the Spotted Kite is found extensively throughout New South Wales, and that it closely resembles its European congeners in its habits and mode of life. Small quadrupeds, birds, lizards, and snakes constitute its principal nourishment. The nest is built upon the ground.

The BUZZARDS (*Buteones*) constitute a group of somewhat heavily-constructed birds, of moderate size, that are found extensively in both hemispheres, and in almost every latitude. Their bodies are stout, their heads broad, thick, and flat; they all have short beaks, which curve downwards from the base, are comparatively thick at the sides, and without denticulations on the margin. Their necks are short, and their wings long and rounded; in the latter the fourth quill usually exceeds the rest in length. The tail is of moderate size, the tarsi of no great height, and furnished with short, weak toes, which are, however, armed with sharp and formidable talons. The plumage is more or less lax, and composed of long, broad feathers, except upon the head, where they are narrow and pointed, being only exceptionally prolonged into a crest. Dusky hues predominate in the coloration of these birds, and their markings are numerous and very varied.

The Buzzards frequent both mountainous and level districts, preferring, however, such situations as abound in fields and woodlands. During the breeding season each pair takes up its abode in a certain limited district, within which it keeps, never trenching upon the space belonging to a neighbouring couple. Towards other members of the feathered creation they are inoffensive and peaceable, and are only roused to violence should an intruder venture too close to their young family; such as inhabit the northern countries of Europe are migratory in their habits, while those found in southern regions are stationary. All the various species fly slowly, more after the manner of the Eagles than of the Kites; when about to pounce upon their prey, they hover, Falcon-like, for a moment in the air, and then come slowly and heavily down. Upon the ground their movements are ungainly, and their step an awkward attempt at a hop. So strong and keen is the sight of these birds, that they may be very properly termed "eagle-eyed;" their hearing is also good, and their powers of touch and taste well developed.

In spite of the apparent dullness exhibited by the Buzzards, they are superior in intelligence to most of their order, and scarcely deserve to be called rapacious, as when no longer hungry they rarely plunder from mere love of theft; having satisfied their appetite, they seem to trouble themselves no longer about the chase. With other Birds of Prey they would willingly live upon amicable terms; towards the Screech Owl alone they exhibit a most implacable hatred. But the Buzzards themselves have many tormentors, no doubt from the fact that such of their assailants as are light and active find considerable amusement in following and worrying their more ponderous and unwieldy neighbours. Worms, snails, larvæ, and various kinds of insects, together with some kinds of vegetable food, are eaten in large quantities by these birds, so that their services to the farmer are both extensive and important. Rice they will readily devour, and snakes they perseveringly destroy, even if the encounter necessitates considerable exertion. Their eyrie is built in high trees, and constructed in the most careless manner; the eggs are usually three or four in number, though occasionally the female lays but one. The young remain for a considerable time under the care and tuition of their parents, by whom they are most watchfully tended. If taken from the nest when very young, the Buzzard will become so tame that it may be allowed to fly about at large.

The SNAKE BUZZARDS (*Circaëti*) have frequently been numbered with the Eagles under the name of Snake Eagles. These are large birds, of a most peculiar type. Their bodies are slender, but

powerful, with short neck, large head, and strong beak ; the latter curves downwards from the base, is compressed at its sides, and terminates in a long hook. The wings are broad and long, the third or fourth quill exceeding the rest in length ; the tail is of moderate size, broad and straight at its extremity ; the feet are high, and protected by a thick armature of horny plates ; the toes are very short, and furnished with short, sharp, crooked talons. The plumage is lax ; and, as in that of the Eagle, the feathers upon the head and nape are pointed at their tip.



THE SNAKE BUZZARD (*Circæetus brachydactylus*, or *Circæetus Gallicus*).

THE SNAKE BUZZARD.

The SNAKE BUZZARD (*Circæetus brachydactylus*, or *Circæetus Gallicus*) is from twenty-six to twenty-eight inches long, and from sixty-six to sixty-eight across the wings ; the latter measure eighteen, and the tail nine inches. The upper part of the body of this bird is brown. the feathers upon the head and nape pale brown, tipped with a still lighter shade ; the quills are blackish brown, edged with two borders, one being white, the other pale brown, and marked with an irregular black line ; the tail is brown, broadly tipped with white, and adorned with three black stripes ; the brow, throat, and cheeks are whitish, and streaked with delicate brown lines ; the crop and upper part of the breast are bright

light brown ; the rest of the under part of the body is white, with a few brown spots. The large eyes are surmounted with a ring of wool-like down, and the cheek-stripes are covered with bristles ; the eye is yellow, the beak blueish black, and the cere and feet light blue. The young differ but slightly from the adult birds.

Until the beginning of the present century this Buzzard was almost entirely unknown, but it is now met with throughout all the countries of Southern Europe. Its habitat, however, extends beyond that continent ; indeed, it often wanders far into Northern Africa, and Jerdon mentions it as common in India. In Central Europe it is a summer bird, appearing about May, and departing early in the autumn ; its disposition is extremely quiet and indolent, and as it usually prefers to seek shelter in the recesses of forests, is not very frequently seen ; in Hindostan, on the contrary (where it breeds), it inhabits the more open country, whether the latter be dry or marshy. In Northern Africa it flies about during the winter in parties of from six to twelve, often settling on such rocks as are near rivers, but more generally upon the open and barren steppes ; it has also been known to breed in North-western Africa. The Snake Buzzards, according to our own experience, although quiet and idle, are exceedingly quarrelsome while occupied with the care of their young ; at other times they are remarkably timid, and often utter loud cries if disturbed. Those we saw in Africa would remain perched when we approached, and glower at us with their large eyes in a most unearthly manner, without attempting to save themselves by flight. It is only early in the morning and late in the evening that they are seen upon trees, the entire day being spent in searching after prey. While thus employed nothing can exceed the deliberation with which they move ; indeed, it would be difficult to find in any other members of the feathered race such a picture of indolence as they present, while they sit motionless at the edge of the water, or flap their way ponderously through the air. Towards its own kind this bird exhibits many most unamiable qualities, for so greedy and envious is it, that should one of its brethren prove fortunate in the chase, a hard-fought battle is sure to ensue, in order to compel the possessor of the coveted morsel ignominiously to resign its prize, and during such encounters the combatants often use their claws with so much effect that, powerless to fly, both fall together to the ground. About noon the Snake Buzzard appears upon the river banks, over which it hops much after the fashion of the Raven. An isolated tree is usually selected for a sleeping-place, as from such a situation the bird can command a view of the surrounding country.

The food of this species consists principally of reptiles, though it also devours large quantities of fish, which, should the water be shallow, it readily obtains ; according to Jerdon, it also consumes rats, small birds, crabs, and the larger kinds of insects. The manner in which this bird gives battle to serpents has been thus described : "A young individual in my possession," says Mecklenburg, "would dart down upon any snake, however large or fierce, and after seizing it with its claws behind the head, bite it vigorously several times through the nape ; the reptile, thus paralysed, was then swallowed by degrees, commencing with the head, each new mouthful being prepared by a preliminary bite through the backbone. During one forenoon I have seen my bird kill and devour no fewer than three large snakes, one of which measured nearly three feet, and was very thick. I have never known an instance in which it tore its prey to pieces before swallowing it. The scales were usually cast up again undigested." Elliot mentions having seen one of these Buzzards completely enveloped in the folds of a huge poisonous snake, the head of which, however, was held so firmly in the bird's beak, that all its efforts to free itself were fruitless. The thick coat of feathers in which this species is enveloped is its only protection against the deadly fangs of its victims ; recent experiments have proved that its system is not, as was once supposed, proof against their poison.

The eyrie of the Snake Buzzard is built about June ; it is flat in shape, and formed of branches and twigs ; the interior is lined with green leaves, and green branches are also fastened outside to

protect the little family from the rays of the sun. It is not uncommon for a pair of these birds to return year after year to the same eyrie. They lay one or two eggs of an oval shape, with very thin, coarse shells, of a blueish white colour. Both parents participate in the labour of incubation, sitting alternately upon the eggs for about twenty-eight days. We are told, on reliable authority, that, if molested, the mother bird removes her young to another place. The Snake Buzzard is easily tamed if taken early from the nest.

The CRESTED BUZZARDS (*Spilornis*) are a group of very remarkable birds, inhabiting the most southern countries of Asia and Africa. Such species as we are acquainted with are of considerable size, and powerfully built; their pointed wings, in which the fourth quill is the longest, extend to the middle of the tail; the latter is of moderate length, and rounded at the extremity; the tarsus is high, and the talons short and sharp; the beak, which is straight at the base, curves abruptly towards its tip; the margin of the upper mandible is without teeth, whilst that of the lower one is excised near the extremity. The plumage is thick, and prolonged into a crest at the back of the head.

THE BACHA.

The BACHA (*Spilornis Bacha*), the species we select as an example of this group, is described by Le Vaillant as from twenty-two to twenty-four inches long, of which ten belong to the tail. The plumage is a dusky greyish brown, darkest upon the upper parts of the body; all the feathers upon the borders of the wings, lower portion of the breast, belly, and legs are marked with three or four round, white spots, standing out, by contrast, very distinctly from the dark body; the wings are blackish brown, and the feathers upon their covers bordered with greyish white; the crest is white, tipped with black, as are also the feathers on the brow. The eye is brownish red, the cere and feet yellow, and the beak greyish blue.

The Bacha is found throughout the interior of Southern Africa, Java, Nepaul, and China. According to Le Vaillant, it frequents the most barren and mountainous districts of the countries it inhabits, subsisting upon a variety of small quadrupeds, reptiles, and insects. It passes a solitary life, after the manner of our Buzzard, and is but rarely met with. The voice of this species is very melancholy. The breeding season commences in December; the eyrie, which is most carelessly constructed, is placed in holes of rocks, and usually contains from two to three eggs. Bernstein tells us that such of these birds as inhabit Java live upon the outskirts of the woods, or amongst the groups of trees growing near the villages. In such localities the nest is also built, a thickly-foliaged tree being usually selected for the purpose. The same author describes the eggs as being of a dull white, marked with irregular streaks and spots of reddish brown, which usually lie thickest towards the two ends.

Other species of Crested Buzzards are met with in the Philippine Islands, Ceylon, and India.

THE HONEY BUZZARD.

The HONEY BUZZARD, or WASP KITE (*Pernis apivorus*) may be regarded as forming the connecting link between the Buzzards and True Kites. In this bird the body, wings, tail, and beak are long, the latter, moreover, is shallow, weak, and but slightly curved towards its tip; the third quill of the wings exceeds the others in length, and the cheek-stripes are covered with short, stiff feathers; the plumage of this species is also harsher, and lies closer than that of the Buzzards above described. Its length is from twenty-three to twenty-four inches, its breadth fifty-two to fifty-four inches; the wing measures fifteen, and the tail nine inches. The plumage varies very considerably, both in its colour and

markings, and it is, therefore, difficult to make any decided statements on these points. The male is sometimes of an uniform brown, the tail alone being adorned with three large and several small stripes; the head is greyish blue; sometimes, however, we find the upper parts of the body brown, and the lower spotted more or less with white; or the feathers on these portions white, with brown spots and streaks upon the shafts. The young are usually brown or yellowish brown, the feathers having dark shafts, except those on the nape, which are light. The eye is either golden, or of a silvery whiteness; the beak is black, the cere bright yellow, and the feet lemon colour.

The Honey Buzzard inhabits all the southern and central countries of Southern Europe, and during the course of its migrations frequently journeys as far as Western Africa. In disposition it is cowardly, dull, and indolent; its movements have been described in such contradictory terms, that we can scarcely imagine them to be applied to the same species; according, however, to our own observations, its flight is light and beautiful, it can rise to a great height, and describes an endless variety of evolutions in the air; like most of its congeners, it runs well, and often pursues its prey upon the ground. Its voice is monotonous, and its call-note sometimes prolonged for whole minutes at a time. The food of this species differs from that of any other Bird of Prey, for it lives principally upon wasp-grubs, very carefully avoiding such as are full-grown, and, therefore, protected by their sting. It also devours beetles, grasshoppers, caterpillars, frogs, mice, and rats; and will frequently linger near a Hawk until the latter has finished its meal, in the hope of securing what is left. During the summer it occasionally eats various kinds of berries.

The eyrie is usually placed at no great height, upon the branches of some sturdy beech or oak; pines and fir-trees being but rarely resorted to. The nest, which the bird is at no pains to conceal, is carelessly constructed of dry twigs, so lightly thrown together that the brood is often visible through its walls. The eggs, from two to four in number, are sometimes round, sometimes oval; the shell is more or less smooth, and either yellowish red or brownish white, marbled with lines of different tints, which, like the colour, are so very variable that any description of them would be useless. The young are reared upon caterpillars, flies, and other insects, with which they are supplied from the crops of the parent birds; at a later period they are fed upon honeycombs, filled with bee-grubs, also upon frogs, birds, and other substantial diet.

Behrends relates the following facts to prove how tame the Honey Buzzard may become: "My bird," he says, "before it had been many weeks in the house, learnt to attach itself not only to certain individuals of the family, but to my dogs, towards one of the latter, in particular, it exhibited great affection, following it about, and perching close to it whilst it slept. This bird was allowed to run at large about the house, and never found a door standing open without calling loudly until it was shut. It answered to the name of 'Jack,' but would only come at my call when hungry, or in a particularly good humour. I have seen it spring on to a lady's lap or shoulder, and play with her hair by drawing a lock through its beak, at the same time uttering a piping kind of cry; it would also raise its wing in order to be scratched, a performance that it much enjoyed. When hungry it used to rush screaming through the house until it found my maid, upon whose dress it clambered in its energetic endeavours to have its wants attended to. If not immediately satisfied its cries became frightful, and it would assume a very pugnacious attitude, as though it would say, 'You had better be careful how you trifle with me.' Bread and milk was the diet it preferred, but it would eat meat, porridge, and potatoes; wasps it merely killed, without eating them. 'Jack' was extremely susceptible to cold, and would hide near the stove during the winter, remaining very quiet, as he knew well that his presence in our sitting-room was against rules. His general demeanour somewhat resembled that of a Crow, his movements were slow and deliberate, and it was only when alarmed or pursued that he sought safety by taking a series of short jumps. I only succeeded in keeping him for three years."

THE CRESTED HONEY BUZZARD.

The CRESTED HONEY BUZZARD (*Pernis cristatus*) is found throughout the whole of Hindostan, where it inhabits all woodland districts, from the coast to an altitude of 8,000 feet above the sea. This species, which is very closely allied to the bird above described, subsists, like its European congener, upon young bees, wasps, ants, and caterpillars; only occasionally devouring rats, reptiles, and (as we learn from the natives) young birds and eggs. The eyrie is built upon trees; the eggs are of a light colour, and thickly covered with spots.

THE ROUGH-LEGGED BUZZARD.

The ROUGH-LEGGED or WINTER BUZZARD (*Archibuteo lagopus*) is distinguished from all its congeners by having its tarsi feathered, like those of the Eagle. The beak of this species is small and narrow, very decidedly curved, and furnished with a long hook; the wings, in which the third and fourth quills exceed the rest in length, extend, when closed, to the end of the long and rounded tail. The plumage is lax, its feathers for the most part large, those upon the head and nape being small, and rounded at the tip; the brow is white, the tips of the wings are dark slate colour, the tail white, its grey tip striped with black; the breast of the male and belly of the female are spotted with blackish brown; the hose are reddish yellow or whitish grey, similarly marked. The coloration of the feathers upon the other parts of the body is a strange mixture of all these different tints. The length of this bird is from twenty-two to twenty-five inches. The female is larger than her mate. The Rough-legged Buzzard is found throughout all the northern countries of the globe, proving itself everywhere to be a very formidable enemy to the Lemming. The eyrie is built upon rocks as well as trees. This bird is sometimes met with in England, where it has been killed once or oftener in almost every county; it has, however, rarely been known to breed here, and is usually obtained in spring or autumn, when changing its latitude from north to south, or *vice versa*.

Sir John Richardson, in his "Zoology of North America," tells us "that this species advances east of the Rocky Mountains, as high as the sixty-eighth parallel. It arrives in the fur countries in April or May, and, having reared its young, retires southward early in October. It is by no means an uncommon bird in the districts through which he travelled, but, being very shy, only one specimen was procured. A pair were seen building their nests with sticks on a lofty tree, standing on a low, moist, alluvial point of land. They sailed round the spot in a wide circle, occasionally settling on the top of a tree, but were too wary to allow an approach within gun shot." In the softness and fulness of its plumage, its feathered legs, and habits, this bird bears some resemblance to an Owl. It flies slowly, sits for a long time on the bough of a tree, watching for mice, frogs, &c., and is often seen skimming over swampy pieces of ground, and hunting for its prey by the subdued daylight which illuminates even the midnight hours in high latitudes. Wilson observes that in Pennsylvania it is in the habit of coursing over the meadows long after the sun has set. It is fitted for this nocturnal chase by the fleeciness of its feathers, which contributes to render its flight noiseless."

THE COMMON BUZZARD.

The COMMON or MOUSE BUZZARD (*Buteo vulgaris*) is distinguished by its small, narrow, hooked beak, and bare tarsi; its tail is comparatively short, and its plumage less lax than that of the above-mentioned species, which, in other respects, it closely resembles. Its length is from twenty-two to twenty-five inches, its breadth from fifty to fifty-eight inches; the tail measures about nine inches. The coloration of the plumage varies so much in different individuals as to render a general description almost impossible—indeed, no two birds are alike.

The Mouse Buzzards are met with throughout a large part of Europe and Central Asia, appearing in the southern portions of our continent during the winter, and living solitarily in the vicinity of lofty mountains during the summer months. They are rarely seen in Northern Africa, or in the lower parts of India, but are common in certain districts of the Himalayas. In some of the warm countries of Europe they remain throughout the entire year; in such as are more northern, they arrive about March or April, and leave again in September. When about to migrate, these birds congregate in parties of from twenty to a hundred, and as the flocks usually proceed in the same course when quitting us, without actually assembling in large hosts, they often fly so as to spread their



THE COMMON OR MOUSE BUZZARD (*Buteo vulgaris*).

numbers over a square mile of country. At such times their flight is slow, and varied by the performance of many elegant evolutions, sweeping about in circles for half-an-hour at a time; and, as they return northwards, they often linger for whole days upon spots likely to afford them a plentiful supply of food. When about to settle, they generally select such localities as are well covered with trees, and in the vicinity of fields or pasture lands, these situations being rich in such game as they prefer; they are, however, found in large forests, and sometimes ascend to a great height in mountain ranges.

The movements of this Buzzard are characterised by a slowness and clumsiness that render it almost unmistakable, either as it soars slowly aloft, or sits, with body huddled together and ruffled plumage, upon the branch of a tree, from whence it watches with keen eyes, for the appearance of its prey. During the breeding season and early spring, however, these birds exhibit an activity for which we are quite unprepared, and soar to prodigious heights, displaying their skill in a variety of aerial

manœuvres, apparently for the amusement of their mates. The voice of the Common Buzzard very closely resembles the mewing of a cat; its sight is excellent, its hearing delicate, and the other senses very well developed; its disposition is intelligent, keen, and sly. The eyrie is built, or an old one repaired, about May. This structure is placed upon a tree, and carefully formed of branches, such as are thickest being placed beneath the others; the interior is lined with very fine twigs, moss, hair, and other soft materials. The nest is about two feet in diameter. The brood consists of three or four greenish white eggs, spotted with light brown; the female alone sits, but at a later period both parents co-operate in tending the little family. This species occasionally takes possession of the nests of Crows or Ravens, instead of building on its own account.

Rats, marmots, snakes, and insects are greedily devoured by the Mouse Buzzard, yet, as its name indicates, *mice* constitute its favourite diet—indeed, so large is the number eaten by this bird, that, according to Lenz, a family of five consumes no less than 50,000 of these destructive animals in the course of a year. We will not attempt to include the next generation in this calculation, or our readers would be involved in a sum as intricate as that with which we are all familiar, respecting the nails in a horse-shoe; if, however, we take into account that the Mouse Buzzard attacks and kills all kinds of snakes, whether poisonous or not, we shall be able in some measure to estimate the very valuable services it renders to the human race. The generally-received impression that this species is proof against the venom of serpents is incorrect, as has been proved in a variety of instances.

THE RED-WINGED OR GRASSHOPPER BUZZARD.

The RED-WINGED OR GRASSHOPPER BUZZARD (*Poliornis rufipennis*) is a small lively bird, inhabiting Central Africa. This species is recognisable by its long, powerful, but slightly curved beak, and overhanging cere. Its pointed wings, in which the fourth quill is the longest, reach almost to the end of the long tail; the legs are high, and the toes small; the brow white, the mantle brownish grey, the head, nape, and lower portions of the body reddish yellow; the feathers upon the back have dark shafts and light borders, those on the under part of the body are marked with dark streaks; the tail is deep grey, edged with white, and darkly striped towards its tip. The quills are reddish brown, lightest in shade upon the inner web, tipped with black, and having a white border. The cere, bare cheek-stripes, and feet are bright yellow; the beak is deep orange at its base and greyish black at the tip. The length of the male is fourteen inches and a quarter; the wing measures eleven, and the tail six inches and three-quarters.

The Grasshopper Buzzard makes its appearance upon the plains of Central Africa about the rainy season, during which period it finds abundance of food, and after lingering for some time, quits that part of the continent for still warmer regions. In its habits this bird is half Falcon and half Buzzard; like the latter it perches for hours together upon the branches of a tree, surveying the surrounding country, and watching for prey; then, suddenly rising, it flies, with rapid strokes of its wings, to a considerable distance, and, after hovering for a few seconds, swoops down, and pounces upon the grasshopper it has marked for its own. We are without further particulars of the life of this bird.

THE TESA.

The TESA (*Poliornis Tesa*), the Indian representative of the species above described, is found throughout Hindostan, where it is very numerous both upon pasture land and on open plains. The flight of this Buzzard is rapid, and much resembles that of the Kestrel. When upon the wing it usually keeps near the ground, over which it often runs for some yards, in order to secure its prey, and few prettier sights can be imagined than that presented by this bird as it thus half runs, half flies, in pursuit of the grasshoppers, upon which it mainly subsists; it will also eagerly devour rats, mice,

lizards and small snakes, frogs, cray-fish, crabs, and large insects. Burgess tells us he saw a Tessa picking the remains of a full-grown Quail. The eyrie is built upon a tree; the eggs, four in number, are laid about April or May; these are sometimes quite white, or white spotted and marked with brown.

South America possesses a group of Buzzards, distinguished from the birds already described, by the formation of their beak, which is usually thin and shallow. The members of this group are also more slender, and have smaller heads and longer wings than the rest of the family; their wings, in which the fourth quill is the longest, are narrow, very pointed, and extend beyond the end of the long and broad tail; the latter is either graduated or excised at its extremity. Their legs are weak, and the tarsi bare; the toes are long, and armed with long, slender, and slightly bent talons.

THE CARACOLERO.

The CARACOLERO, SNAIL BUZZARD, or HOOK-BEAKED BUZZARD (*Rostrhamus hamatus*), is one of the members of this group with which we are most familiar. Its length is from sixteen to seventeen inches, and its breadth from forty to forty-two inches; the wing measures from thirteen to thirteen and a half, and the tail from six to six and a half inches. The plumage is of an uniform dark grey, shaded with pale brown upon the back and shoulders; the narrow feathers that clothe the legs are edged with red, the upper tail-covers are white at the base, and bordered with white. The eye is bright blood red, the cere, cheek-stripes, corners of the mouth, half the under mandible, and the legs bright orange; the beak is black. The coloration of the young is very varied, and differs considerably from that of the parent birds.

According to D'Orbigny, the Snail Buzzards are found throughout the whole of South America, where they frequent the margins of lakes and morasses, in large numbers. In their habits they are social, keeping together in parties of about thirty birds; indeed, it is by no means uncommon to see a dozen or more perched on the same tree. When in flight they summon each other with loud cries, and all are constantly upon the watch to detect and warn their companions against approaching danger. Their flight is light, graceful, and rapid, and their attitudes, when perching upon a tree, extremely dignified. Except during the breeding season (respecting which we have no information), they sweep over the face of the country, seldom remaining for any length of time in one place. The food of this species consists of snails, reptiles, fish, and insects. Grundlach tells us that upon one occasion he saw a great number of nests built upon the trees that surrounded a large pond, and was told that they were those of the Caracolero; the young had already quitted the eyries, though it was then only April.

THE URUBITINGA.

The URUBITINGA (*Hypomorphnus Urubitinga*) is one of the largest Buzzards with which we are acquainted. Its beak is comparatively short, high, and straight towards the base, but from thence it curves downwards in a long hook; the head is large, the wings, in which the third quill is longer than the fourth and fifth, are of moderate size; the tail is very long, and composed of broad feathers. The feet are remarkably high, the tarsi being twice the length of the middle toe; the talons are strong, pointed, and much bent. The plumage is rich in texture. The cheeks, region of the eyes, bridles, and throat are sparsely covered with a bristle-like growth; the eyelids have very well developed eyelashes. The length of this species is about twenty-two inches, and its breadth fifty-one inches; the wing measures fifteen and a half, and the tail nine inches; the female is larger than her mate. In old birds the plumage is principally brownish black; the feathers on the nape are white at their origin,

and those on the back gleam with a greyish blue lustre, whilst such as clothe the inner side of the legs are marked with small light streaks. The wings are blackish brown adorned with narrow greyish blue lines; the tail-feathers are blackish brown at the root and tip, white in the middle, and surrounded by a narrow dirty white border. The eye is brownish yellow, the cere and base of the lower mandible yellow, the upper part of the beak greyish black, the feet light yellow. The young are yellow or brownish yellow; the feathers upon the hinder parts have blackish brown spots at their tips, and the wings and tail-feathers are striped with yellow and brown.

The Urubitinga is, without question, the noblest and most courageous member of its family, and, according to the Brazilians, is a very dangerous foe to monkeys, small quadrupeds, birds, lizards, and snakes; it also eagerly devours grasshoppers and snails; in order to obtain these it prefers to make its home in the forests, upon the outskirts of which it loves to linger; it is occasionally, but rarely, seen in the open country. The Prince von Wied tells us that he has often found this bird perched in the branches of some thickly-foliaged tree, surrounded by a host of feathered tormentors, who were doing their best to excite it to frenzy; these amiable endeavours, however, had no visible result; the nobler bird sat still, tranquilly pursuing its meditations, apparently quite unconscious that it was the subject of their gibes and raillery. The flight of the Urubitinga is majestic, and capable of being long sustained; its voice is very shrill, and composed of but two notes. The eyrie is usually constructed upon such inaccessible trees as grow near the banks of a river. We learn from Burmeister that the eggs, two in number, are elongated, and white, spotted with various shades of reddish brown.

The VULTURE FALCONS (*Polybori*) are a family of birds inhabiting South America. Their bodies are slender, their wings comparatively short, their tails long, broad, and rounded at the extremity; the tarsi are high and thin, the toes weak and of moderate size, the claws pointed and but slightly curved; the beak is long, straight towards its base, hooked at its tip, and straight at the margins. The plumage is harsh, and composed of large feathers; those upon the head are pointed. The cheek-stripes are *always*, the throat and brow *occasionally* bare; the eye has long lashes.

The members of this family may be regarded as holding in South America the place occupied in Europe by the Raven, Magpie, and Crow. They frequent all parts of the country in large numbers, and live in such close proximity to man, that they are literally found at his very door. Two species of this group are particularly fond of the society of the human race, and are met with throughout the land, on every spot where even the smallest settlement has been established; others frequent the sea-coast, upon which they obtain the means of subsistence; and some inhabit the woods, feeding, in a great measure, upon fruits and berries. Carrion and offal have, however, the greatest attractions for the Vulture Falcons, and wherever these are to be met with hundreds are certain to appear. The flight of these birds is so peculiar as to cause them to be recognised even at a great distance; in consequence of the equal length of the quills, the wings appear square when extended, and the tail is kept fully spread, whilst they travel through the air with a slow, sweeping kind of stroke; occasionally, however, they fly with considerable rapidity. When upon the ground their gait closely resembles that of the True Vulture. The sight and hearing of this family are keen, and their other senses tolerably acute; that of smell they certainly possess, and the nostrils are always moist. In disposition they are bold and insolent, and would willingly be extremely social; their shrill Hawk-like cry, however, renders it undesirable to cultivate their intimate acquaintance. Their nest is built upon the ground or on the branches of trees; the eggs, from two to six in number, are round, and spotted like those of Falcons. Both parents assist in the cares of incubation, and are much attached to their young. Although extremely numerous in their native land these birds are but seldom brought to Europe, and are therefore always numbered amongst the rarities of our zoological collections.

THE CHIMANGO.

The CHIMANGO (*Milvago Chimachima*) is one of the most extensively distributed species of this family. The formation of its body is slender, its head large, the wings long and pointed; in the latter the fourth quill exceeds the rest in length. The tail is of moderate size, and slightly rounded; the legs high, slender, and the tarsi sparsely feathered; the toes are long, and armed with very sharp hooked talons; the beak is slender, and terminates in a short hook; the cere is broad, and projects beyond the well-developed nostrils, which are surrounded by a kind of ridge; the throat is but slightly covered with feathers; the bridles and region of the eyes are bare. Dirty white predominates in the plumage of the adult male; the wings, tail, back, and a streak above the eyes that extends to the nape are dark brown; the four exterior quills are white in the middle, and marked with dark spots, thus forming an irregular white line; the other quills are yellowish white at their origin, and streaked with black; the upper portion being blackish brown. The tail-feathers are white, tipped and striped three times with blackish brown. The eye is greyish brown, the beak pale blueish white, brightest towards its tip; the cheek-stripes, cere, eyelids, and a small place round the eye, and the chin are orange colour; the feet are pale blue. But little difference is perceptible in the plumage of the male and female. In the young birds the top of the head and cheeks are dark brown, the sides and back of the neck yellowish white, spotted with brown; the back is dark brown, and some of the feathers are bordered with red. The wing-covers are striped with two shades of brown, the throat is dirty white, the breast blackish brown, each feather being streaked with yellow; the belly is yellowish. The length of this species is fourteen inches and a half, its breadth thirty-one inches; the wing measures about ten, and the tail six inches. The female is a trifle larger than her mate.

The Chimangos inhabit almost the whole of South America, and throughout that continent are met with in great numbers; pasture lands or large open tracts are their favourite resorts, and, if not molested, they will congregate around and upon the houses of the natives; Boeck mentions having often seen them perching in crowds on the roofs, or following the ploughman up and down the fields. They rarely frequent mountains, and then only to a limited height; but at times they are casual visitors to the sea-coast. When upon the ground the Chimango moves with dignified ease, and regards all such as approach it with a proud glance of its eye, that would lead us to imagine its intelligence superior to its position in the economy of Nature. Its flight is far from rapid, and it seldom rises high into the air. According to the Prince von Wied, these birds are never seen flying peaceably about in parties, but exhibit on all occasions such a decided love of quarrelling and strife that even a chance meeting between two of them, if strangers to each other, is likely to be followed by a furious battle. No other Birds of Prey will eat such various kinds of food as are ordinarily devoured by the Chimango, to whose voracious appetite it would seem that nothing comes amiss, even down to the merest refuse from the kitchens of the natives; it much enjoys potatoes, and not only abstracts them from the houses, but will dig them up immediately after it has seen them planted. Of all the hungry crew by which the dead body of a horse or cow is invariably surrounded, this bird is always the last to leave the well-picked bones, and may often be seen, long after the rest have deserted it, running up and down within the skeleton, in the hope of finding an as yet undiscovered morsel; it eagerly devours worms, larvæ, snails, reptiles, fishes, birds, and small quadrupeds, besides a great variety of other articles of food gleaned from the sea-coast. The voice of the Chimango is extremely harsh and shrill. The breeding season commences in September. The eyrie, which is built upon a tree, is a large shallow structure formed of branches, twigs, and roots. The brood consists of five or six very round eggs, of a reddish or light brown-grey colour, marked with irregularly disposed spots of red or brown, which lie closest at the broad end. During the

period of incubation the Chimango is somewhat less quarrelsome towards its associates than at other seasons of the year, and exhibits great affection for its young.

THE VULTURE BUZZARD.

The VULTURE BUZZARD (*Milvago Australis*) is also a well-known inhabitant of South America, and is particularly numerous in the Falkland Islands. In size this species resembles the Spotted Eagle (*Aquila nœvia*). The plumage of the adult birds is deep black, the feathers upon the back, neck, and breast being streaked with white; the hose are bright reddish brown; the origin of the quills and tips of the tail feathers white. The beak is grey, the cere and feet of a yellow shade. The young are without the light streaks upon the neck and breast, the feathers on these parts being speckled with red or reddish white. The quills are rust red at the base, the tail blackish brown, the beak deep brown, and the feet brownish yellow. Abbott tells us that these birds will fall upon and devour such of their own species as have been wounded; and that they are so covetous and inquisitive that he has known them drag a large hat and two balls to the distance of a mile from the spot on which they were first discovered. According to another authority, they are so violent in their disposition that it is not uncommon for them to root up the grass when they are in a particularly troublesome humour. Upon the ground they run with all the agility of a pheasant, and are then very elegant in their appearance; when perched we cannot pay them the same compliment, as their crop is often so enormously distended as to excite strong feelings of disgust. The Vulture Buzzard spends but little of its time in the air, through which it may be said to walk rather than fly, so peculiar and heavy are its movements when upon the wing. It is noisy in its habits, and possesses a loud harsh voice, much resembling that of the Crow; whilst uttering its very disagreeable but varied notes, the head is repeatedly thrown backwards and forwards, after the manner of its congeners. The eyrie is built upon the precipitous rocks that abound upon the coast, and is usually formed of dry blades of tussock grass, lined with wool. The two or three eggs of which a brood consists are round, brown, and variegated with dark spots and streaks. The female lays about November, and Abbott tells us that the young do not attain their full beauty until they are two years old.

THE CARANCHO.

The CARANCHO or TRARO (*Polyborus vulgaris* or *Polyborus Brasiliensis*) is found extensively throughout South America. The group of which this bird may be regarded as the type, is characterised by a slender body and powerful wings (in which the third quill is the longest) that extend almost to the end of the tail; the feathers of the latter are ragged at the tips, as in the tail of the Vulture. The legs are long, the toes short, and the talons strong, sharp, and but slightly curved. The beak is large, high, straight at its base, and only slightly bent. The plumage is heavy and lustreless. The feathers upon the head, neck, and breast, are narrow; those on the back large and rounded. The cheek-stripes, as well as the region of the chin and crop, are so sparsely covered with short bristles that they appear to be bare. The length of the Carancho is about one foot two inches; its breadth more than four feet; the wing measures above fourteen, and the tail above seven inches; the feathers upon the top and back of the head can be raised so as to form a crest. The back is dark brown striped with white; the wings are of the same deep shade, streaked with a paler tint upon the posterior quills and wing-covers; the cheeks, chin, throat, and upper part of the breast are white or yellowish white; the sides of the throat and breast streaked like the back. The belly, legs, and rump are of an uniform blackish brown; the tail feathers are white, tipped broadly with blackish brown and thickly covered with extremely fine brown lines; the eye

is grey or reddish brown ; the cere, cheek-stripes, and the bare space around the eyes brownish yellow ; the beak is light blue, and the foot orange colour. The female is larger than her mate, the only other difference in appearance consisting in the comparative paleness of her coloration. The feathers upon the bodies of the young birds are pointed and have light borders, those upon the top of the head being of a deep brown, but with this exception their plumage is very dull and faded in its appearance.

These remarkable birds are frequently met with in pairs, wandering over the plains of South America ; but they are most numerous in the extensive regions known as the Steppes or Pampas, or near morasses. When seen upon the ground their appearance is striking and even beautiful ; the crest is borne aloft, and each bird moves with an ease and bold bearing that might almost be termed majestic. Animal food of all kinds is greedily devoured by the Caranchos, and they capture mice, small birds, reptiles, snails, and insects, after the manner of Buzzards. Azara tells us that flocks of sheep if not protected by the presence of a good dog, are constantly in danger of falling victims to the attacks of these voracious marauders, who come down in parties of four or five upon the defenceless lambs, and tear out their entrails even while still alive.

The Caranchos, says Mr. Darwin, together with the voracious Chimangos, constantly attend in numbers the *estancias* and slaughter-houses. If an animal dies on the plain, the Milvago begins the feast, and then the Caranchos pick the bones quite clean. Besides devouring the carrion of large animals, these birds frequent the borders of streams and sea-beaches to pick up whatever the waters cast ashore. In Terra del Fuego and on the west coast of Patagonia they must live exclusively on such supplies. The Caranchos are said to be crafty and to steal great numbers of eggs. They attempt also, together with the Chimango, to pick the scabs from the sore backs of horses and mules ; the poor animals on the one hand with ears down and back arched, and on the other the hovering bird of prey eyeing at a distance the disgusting morsel, form a picture that has been described by Captain Head with peculiar spirit and accuracy. A person will discover the necrophagous habits of the Carancho by walking out upon one of the desolate plains and there lying down to go to sleep ; for when he awakes he will see on each surrounding hillock one of these birds patiently watching him with an evil eye. If a party goes out hunting with dogs and horses, it will be accompanied during the day by several of these attendants, and in the desert between the rivers Negro and Colorado, numbers constantly attend on the line of road to devour the carcasses of the exhausted animals which chance to perish from fatigue and thirst.

These birds are much detested by the inhabitants of the districts where they abound, on account of their raids upon the meat laid out to dry in the fields. They will also steal fowls from under the very eye of the farmer, and destroy eggs in great numbers ; we are told that they even pursue Cranes until the unfortunates are compelled to disgorge the meat they have been seen to swallow. These various attacks upon the outer world are generally returned with interest upon the head of the rapacious offender, for not only other birds, but even its own species, allow no opportunity for annoying or harassing it to escape their notice ; while another troublesome class of enemies contributes to render the life of these disgusting birds far from enviable ; we allude to the vermin with which their plumage is so infested as to render it unadvisable to touch even their dead carcasses. The voice of the Carancho is harsh, and has given rise to its name of "Traro," as it consists of two notes—"tr-a-a-a" and "r-o-o-o," uttered in such a manner as to sound like the noise made by striking two pieces of wood together, and the attitudes into which this bird throws itself, whilst vociferating in this strange manner, are most laughable and eccentric. From early morning till sunset, the Carancho is actively employed in the pursuit of prey ; at night it perches itself upon the lower branches of some ancient tree, in company with its almost inseparable

companion, the Carrion Vulture; it often flies to a distance of some five or six miles in search of one of its favourite resting-places, and should an old tree not be discovered, takes possession of a piece of rock, or of one of the hills raised by the termites. Throughout the entire year the female is never deserted by her mate, and even when these birds are seen in large parties, it is easy to distinguish the respective pairs by their mutual attentions. In Paraguay the breeding season commences in the autumn; in the more central parts of the continent it takes place in the spring. The nest, which is large and flat, is placed on a tree, and formed of branches lined with roots, grass, and moss. The two eggs which form a brood are yellow, spotted with brown or



THE CARANCHO OR TRARO (*Polyborus vulgaris* or *Brasiliensis*).

crimson. The young are covered with white down when they first leave the shell, and are for a time tended with great care by their parents; this attention is, however, of short duration, the little family being sent forth early to shift for themselves. These birds are but rarely tamed. Audubon informs us that all the brilliant colours that adorn the bare patches upon the body of the Carancho have completely faded within an hour after the death of the bird.

THE GANGA.

The GANGA (*Ibicter Americanus* or *Ibicter nudicollis*) represents a group known as the SCREAMING BUZZARDS (*Ibicter*).

The body of this species is slender; its tail so long that the wings only reach as far as its middle portion; the tarsi are of moderate size, and equal the middle toe in length; the beak is long, narrow, and arched gently towards its tip, which is slightly hooked. The bridles, cheeks, and throat are bare, only the small portion of the cheek-stripes that passes behind the cere being covered with very long fine bristles. The length of this species is about twenty-two inches, its breadth forty-two to forty-five inches, the wing measures fifteen inches and a half, and the tail nine and a half. The plumage upon the head, throat, nape, back, wings, tail, breast, and sides of the



TRACK ACROSS THE PAMPAS.

upper part of the belly are of a resplendent black, which gleams with a green lustre; the lower part of the legs and belly are white. The eyes are bright red; the cere, corners of the mouth, and base of the lower mandible a beautiful light blue; the bare parts of the face reddish brown. The young are paler in their colours and their feathers are surrounded by a brown border; their eyes are brown.

We learn from the Prince von Wied that this bird inhabits the primitive forests, or such parts of the country as are barren and unfrequented. "It was not," says this author, "until I reached the districts that lie between the rivers Ithéos and Pardo, in fifteen degrees south latitude, that

I was surprised by the loud penetrating notes of the Ganga, whose voice sounded strange and unearthly in those deserted regions. This species is of social habits, and, though often found solitary, is as frequently met with in pairs and numerous flocks. Woods are usually preferred for its dwelling-place, as in such localities it easily finds abundance of wasps, bees, and other insects, upon which it chiefly subsists. Whilst occupied in the chase of prey, its deep-toned voice is constantly heard as it flies about from branch to branch." We are told on reliable authority that it also eats large quantities of fruit and berries, and some kinds of reptiles.

THE SECRETARY.

The SECRETARY or CRANE VULTURE (*Gypogeranus serpentarius*), a member of this family, is one of the most extraordinary birds with which we are acquainted, and well deserves a minute description. Its body is slender, its wings long and straight, the first five quills being of equal length, and there are blunt spurs or excrescences on the carpal joint. The tail is of remarkable length, and very abruptly graduated, the two middle feathers, which are slender, extending far beyond the rest. Owing to the very peculiar construction of the feet, naturalists differ as to the classification of this species, and we have therefore assigned it to no particular group. The principal peculiarity of the Crane Vulture's foot is the disproportionate length of the tarsus; the toes are short and the claws of moderate size, blunt, but slightly curved and very strong. The neck is thick, and the head small, broad, and flat at the top; the beak, which is shorter than the head, is thick, powerful, and vaulted, curving abruptly downwards from its base: the hook in which the upper mandible terminates is of moderate size, and very sharply pointed. The cere extends from below the eyes almost to the middle of the beak. The plumage is thick and formed of large feathers, which are prolonged at the back of the head into a crest, composed of six pairs of feathers placed one behind the other, so that they can be either raised and spread, or laid flat one upon another. The cheek-stripes and region of the eyes are bare. In the coloration of the plumage light greyish blue predominates; the top of the head, crest, nape, quills, and tail feathers, with the exception of the two longest, are black, edged with white at their tip; the belly is striped with black and light grey, the legs with grey and light brown; the two centre tail-feathers are greyish blue, tipped with white, and spotted with black towards the extremity; the lower wing-covers are reddish brown. The crest of the female is shorter and her tail longer than that of her mate, her plumage is also lighter; her legs are striped brown and white, and her belly is entirely of the latter hue. The young resemble their mother. The length of the male is from forty-one to forty-three inches; the wing measures twenty-four inches and the tarsus is one foot long. The female is somewhat larger than her mate.

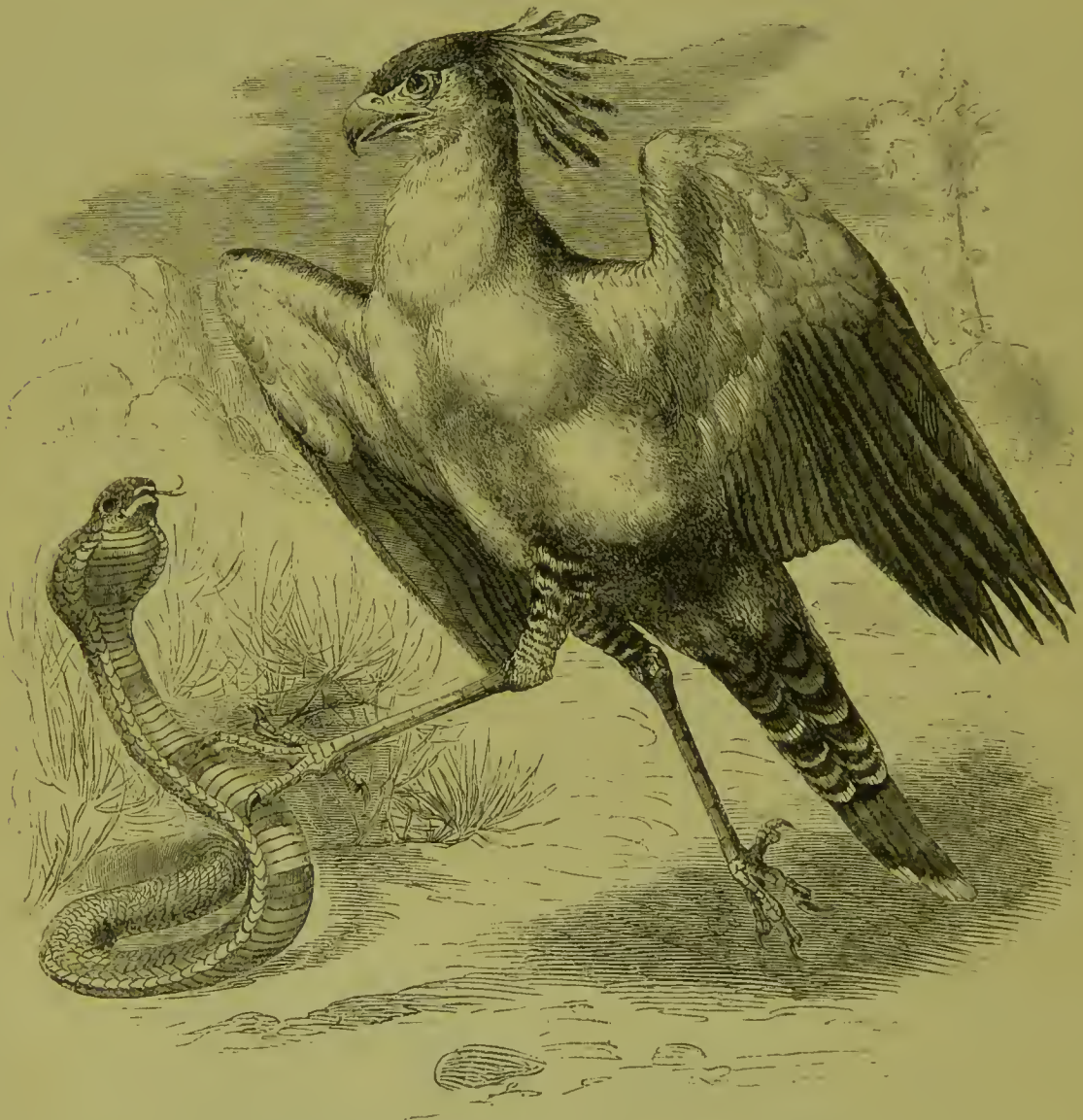
The Crane Vulture inhabits Africa, from the Cape to fifteen degrees north latitude, and from the Red Sea to Senegal; it is also occasionally seen on the Philippine Islands. Such as are met with in Northern Africa are smaller than that we have just described, and are probably a different species. A glance at the engraving of this remarkable bird will convince our reader that its life must necessarily be passed almost entirely upon the ground. Mountains and woods it carefully avoids, and when desirous of flying it is compelled to run a short distance and then spring upwards, in order to get fairly on the wing; at first it moves heavily and with apparent difficulty through the air, but after a few strenuous efforts its flight becomes easy and regular, and it sweeps lightly and beautifully aloft, apparently without even moving its broad pinions: it finds itself, however, most at home upon the ground, and stalks over its surface with much dignity, the long Crane-like legs enabling it to walk for miles without fatigue; when in pursuit of prey it runs with its body thrown forward, almost as rapidly as a Bustard.

The Secretary Vultures live in pairs, each couple occupying a certain district, over which they often hunt for hours together, seeking their food among the grass that covers the plains. After having fully satisfied their hunger they retire to a quiet spot, and remain in a sort of dreamy apathy, until the business of digestion is accomplished. Should one of those extensive conflagrations break out by which the arid plains of Central Africa are so frequently cleared, these birds at once congregate in large numbers and hurry to the spot, in order to enjoy the rich feast thus afforded them. Keeping close to the line of fire, they seize upon and destroy the hosts of living things that are driven forth by the huge clouds of smoke, and thus spend whole hours retreating before the advancing fire, and contesting their prey with the devouring flames: so voracious are they that Le Vaillant assures us he found no fewer than twenty-one small tortoises, eleven lizards, three snakes, and a mass of grasshoppers, in the crop of a specimen he had killed; snakes of all kinds are the objects of their constant attacks, and the same author gives the following graphic account of an encounter between a Crane Vulture and one of the most deadly species of these formidable reptiles:—

“Should the snake assume a threatening attitude, and appear ready to inflict a wound, the bird spreads one of its wings, and holding it like a buckler before the foot with which it is going to transfix its prey, hops backwards and forwards in a variety of strange attitudes. Each attempt to bite is received upon the feathered shield, and when the enemy, finding all its efforts useless, becomes exhausted, it receives either a stunning blow or is cast into the air, as a preliminary to being bitten through the nape, after which it is swallowed either entire or in large pieces. It is supposed by some that the Crane Vulture is proof against the venom of snakes, as it certainly does not reject their poisonous fangs, and we have never heard of an instance in which it has been killed by a bite inflicted during one of these terrible battles.” About June or July furious quarrels arise among the birds themselves relative to the choice of a mate, the disputed female becoming the prize of the most powerful of the rivals, and the pair at once commence the work of preparation for a young family. The eyrie is built upon a high tree or thick bush (generally a mimosa), and constructed of branches, plastered together with clay; the very shallow, almost flat, interior of the nest is lined with cotton-wool, feathers, and other soft materials. One of these structures is often employed for many years by the same couple, such repairs as are necessary being made at every recurring breeding season; and it is no uncommon thing for the branches of which the outer walls of the nest are formed to sprout afresh and spread, until the eyrie becomes literally a leafy bower of great beauty. Whilst repairing their dwelling, the pair pass the night in its interior, but the eggs are not laid until the month of August; these are two or three in number, and about the same size as those of a Goose, but somewhat rounder; the shell is either pure white or slightly marked with little red spots. The young are not hatched until after an incubation of about six weeks, and make their appearance covered with a coat of beautiful snow white down; at first they are perfectly helpless, and for a long time remain so weak upon their legs as to be quite unable to quit the nest, in which they sometimes remain for six months. If carefully trained, the Secretary Vulture soon becomes so tame that it may be permitted to run about a farm-yard, where it lives on the most friendly terms with the poultry, and we are told on good authority that, so far from being a troublesome member of the community, this bird not only interferes should a couple of Hens become quarrelsome and try to peck each other, but that it renders important services by clearing away intruding rats and snakes. On this account these birds are so much esteemed at the Cape of Good Hope that a severe penalty is inflicted if one of them is killed. Many and various are the names applied to this species by the natives of the different countries in which it is common; by some it is known as the “Devil’s Steed,” by others as the “Bird of Fate.” We must own that

to us these fanciful appellations are quite unintelligible, nor has any Eastern tale we have ever read thrown a light upon their origin; nevertheless our unpoetical imagination at once recognises the appropriateness of its nickname of the "Secretary," as the crest upon its head when laid back looks most comically like the pen stuck behind the ear of some scrivener's clerk.

The VULTURES (*Vulturidæ*) are the largest of all the many varieties of Birds of Prey, some of the smaller members of this family being comparable in size with the largest Eagles. The body of



THE SECRETARY OR CRANE VULTURE (*Gypogeranus serpentarius*).

the Vultures is short, broad-breasted, and very powerfully framed; the neck is long, and often quite bare; the head sometimes large, sometimes small; the beak is high and straight, except at its tip, which terminates in a hook; its margins are sharp, and the upper half, or in some species one-third of the entire length is covered by a large cere; a slight outward bulging of the edge of the upper mandible is sometimes perceptible, but an actual tooth-like appendage is never met with amongst these birds. Some species possess a comb-like growth of skin above the beak. The wings are very

large, broad, and decidedly rounded, the fourth quill exceeding the rest in length; the tail is of moderate size, and composed of fourteen stiff and rounded feathers; exceptional instances however occur, in which the second quill of the wings is the longest, and the tail formed of but twelve feathers. The legs are powerful, but the toes are weak and the talons short, blunt, and but slightly curved, making it at once evident that the feet of the Vulture are not much employed in seizing its prey. In most respects the internal structure of these birds resembles that of the Falcons; the following exceptions, however, are worthy of notice. The neck being longer they have more cervical vertebræ, and those of the tail are proportionately broader. The breast-bone is also comparatively low, and the



VULTURES FEASTING.

gullet terminates in a crop of great size, which, when filled, projects like a bag from beneath the throat.

It has always been the custom to speak of the Vultures as most revolting members of the feathered tribes, whose faculties and powers are on a par with their disgusting occupation. That, in the order of Nature, to these birds has been assigned the "scavenger work" is true; nevertheless, in the perfection of the organisation by which they are adapted to the discharge of their important duties, they bear comparison with the most highly-endowed members of the order. They rival the Eagle in their powers of sight and hearing, although they are far from equalling that bird in intelligence. Their disposition is violent but cowardly, and, moreover, exhibits so much stupidity as to

prevent their exercising even an ordinary amount of cunning. Indolent they are not, though they frequently linger for hours on the same spot with dishevelled plumage and drooping wings; but, this period of inanition over, they prove themselves capable of walking well upon the ground, and exhibit great command of wing and power of flight whilst skimming lightly and easily, if not rapidly, through the realms of air. All the divisions of our earth, with the exception of New Holland, afford a home to one or other of the various members of this extensive group; the greater number, however, belong to the Eastern Hemisphere. They are as often found on burning and barren plains as on the pinnacles of lofty mountains, from which they soar to a height unattainable by almost any other bird. Such species as frequent highland regions are the *most* stationary in their habits, although to none of them is that word strictly applicable, their strength of wing enabling them to sweep with ease over the whole face of the country they inhabit. Every town of Africa, Asia, and South America, is visited by a constant succession of these winged scavengers, who clear away a mass of refuse that would otherwise engender pestilence; while other species confine their attention to keeping the plains and fields clear from carcasses that would taint the air with death. In India, according to Professor Behn, it is no uncommon thing to see a Vulture perched upon a corpse floating down the river Ganges, endeavouring, with outspread wings, to steer it to the neighbouring bank, there to be devoured. Occasionally, should the pangs of hunger become very keen, these birds have been known to attack sick, but still living animals; they prefer the dead carcasses of quadrupeds to any other food, but will also eat reptiles or even fish, and we have seen them engaged in demolishing the remains of a crocodile. We are told that they are gregarious, and often fly together in flocks to seek for carrion, wheeling in large intersecting circles over the country, and thus obtaining a view of its whole surface; twenty birds will, in this manner, easily survey an area of as many miles. Some fly at a great height, while others keep near the ground, so that every spot is thoroughly inspected; when one of the party perceives a dead animal, it wheels round so as to announce the discovery to its nearest companions, who, followed by others from a greater distance, hasten to share the feast; all, even the most remote, steering in a straight line for the desired spot—to which it was formerly erroneously supposed they were directed by the extreme acuteness of their sense of smell. When the skin of the deceased animal is too tough to be rent asunder, the Vultures linger around it, or on the neighbouring trees, where they are joined by others of their kind, all eager to share in the banquet; from time to time they examine the carcase, testing its state with feet and claws, and as soon as it has attained the requisite degree of putridity, fall eagerly to work, the strongest driving off the weaker, who retaliate with all the rage of disappointed hunger, hissing and combating for portions already partially swallowed, and burying their nostrils in the flesh, although every minute compelled to desist in order to clear them from the moist filth which chokes them and stops their breathing. At length by continuing these vigorous attacks, the carcase is soon demolished, and nothing remains but the bare skeleton.

When satiated with the disgusting repast, they usually retire to some quiet spot, there to repose until the process of digestion is accomplished. Many hours are usually required for this purpose, after which they go down to the water to drink and take a bath, the latter being eminently necessary to creatures that generally rise from their repast covered with blood and filth of every description. After bathing they again seek repose for some hours, either lying down upon the sand, or standing with wings outstretched in such a manner as to allow the sun to warm them; but if disturbed during these *siestas*, it is not uncommon for the Vulture to disgorge its food, previous to seeking safety in flight. Trees or rocks are usually selected as resting-places for the night. Recent experiments have fully proved that the many tales told respecting the distance at which the Vulture can detect carrion are mere fables; they certainly possess the sense of smell, but by no means to the extraordinary

degree formerly imagined. These birds breed in the spring time of their native lands, and build their eyries either upon rocks or on the bare ground. The eggs, one or two in number, are round, coarse-grained, and of a yellowish or grey tint, marked with spots or streaks of various patterns. In some species, if not in all, both parents assist in the work of incubation. When hatched the young are usually covered with a thick down, and are so extremely helpless that they are fed with carrion that has been more than half-digested in the crops of the parents. At a later period they exhibit a voracity almost exceeding that which distinguishes them when full grown. Many months elapse before the nestlings are capable of providing for themselves, and during all that time they are tended and instructed with great affection by both father and mother, whose united efforts are often scarcely sufficient to satisfy the cravings of their ravenous offspring.

THE BEARDED VULTURE.

To the BEARDED VULTURE (*Gypætos barbatus*) is assigned the first place upon our list, as being the noblest member of the group with which we are acquainted, bearing in some respects a resemblance to the Falcons. The body of this species is elongate, but powerful; its head is large, long, flat in front, and arching upwards towards the back; its neck is short; the wings, in which the third quill is much longer than the first, are of great size and pointed; the long tail is graduated or conical, and composed of twelve feathers; the beak is large; the upper mandible, which is saddle-shaped at its base, rises somewhat towards its tip, and terminates in an abrupt hook; its margins are not incised, and the lower mandible is straight. The feet are short, and by no means powerful; the toes of moderate length, and very weak; the talons strong, and but slightly bent and blunt. The plumage is rich, and composed of large feathers; the origin of the beak is surrounded by bristles, that grow over the cere and beneath the lower mandible, thus forming a kind of beard. The head is covered with small bristle-like feathers, whilst those upon the neck are of large size; the rest of the plumage lies compact and close, except upon the legs, the hose being also formed of large feathers, which extend as far as the toes. In old birds the upper part of the body is black or blackish brown, each of the individual quills being tipped and streaked upon the shaft with white; the under side is reddish yellow or white, spotted here and there with black; greyish brown predominates in the coloration of the young. The skeleton of this bird is remarkably massive. The back-bone contains thirteen vertebræ in the neck, eight in the back, and seven in the tail; the breast-bone is long and broad, and its keel very deep.

It remains at present undecided whether the Bearded Vultures found throughout Europe, Asia, and Africa are to be regarded as different, or merely as varieties of the same species. Of these the European is the largest, being, according to Tschudi, from four to four and a half feet long and nine and a half broad. The tail measures twenty-one inches. The female is generally larger than her mate. The different species, if such they be, vary somewhat in the coloration of their plumage. The Bearded Vulture, or Lämmergeier (Lamb Vulture), of the Swiss Alps inhabits all the lofty mountain ranges of Europe, Asia, and Africa, living usually in pairs, or alone, and but rarely appearing in parties of more than five. The flight of this truly formidable bird will bear comparison with that of many Falcons, and its powers of enduring fatigue are very considerable. Upon the ground it steps somewhat after the manner of the Raven, but with much less ease and nimbleness. Most wonderful tales have been told of the *Ossifraga* (Bone-breaker), as the Bearded Vulture was called by the ancients, from the fact that its favourite method of despatching its victims is by precipitating them from lofty cliffs, in order that the carcase may be shattered by the fall. Gesner, who wrote about the fifteenth century, assures his readers that the eyrie of a Lämmergeier, found in Germany, "was placed upon three oaks, and was constructed of branches and other materials, so

widely extended that a wagon could have been sheltered under it. In this nest were three young birds, already so large as to measure three ells in the spread of their wings. Their legs were thicker than those of a lion, and their claws as the fingers of a man." We smile at such exaggerations as these ; there is no doubt, however, that these birds are by far the most dangerous and rapacious of the many feathered tyrants by which mountain ranges are infested. In 1819 so numerous did they become in Saxe Gotha that, after two children had been carried off by them, a price was set



THE BEARDED VULTURE, OR LÄMMERGEIER (*Gypaëtus barbatus*).

upon their heads. They destroy sheep, hares, she-goats, chamois, and calves, in large numbers, and hold even man himself in so little dread that he would be foolhardy indeed who should venture to molest them during the breeding season. From Simpson we learn that marrow-bones constitute the tid-bits of these feathered monsters, and that no sooner is the flesh stripped away than they either swallow the bones entire or dash them to pieces by dropping them upon a piece of rock. They will also devour tortoises, and the writer from whom we quote suggests that it was probably a Lämmergeier that made the unfortunate mistake of endeavouring to break the hard covering of one of these

creatures by letting it fall upon the head of the poet Æschylus, imagining that worthy ancient's bald pate to be a stone.

Such of these birds as inhabit Asia and Africa are equally formidable. Bruce relates a fact that came under his own notice, well calculated to show that those on the latter continent are by no means behind their European congeners, either in audacity or strength. The traveller and his companions, while in the mountains, were seated at their dinner with several large dishes of goat's flesh before them, when a Bearded Vulture suddenly appeared. It did not swoop rapidly from a height, but came slowly flying along the ground, sat down close to the meat, within the ring formed by the men, and deliberately put its foot into the pan in which a large piece of meat was boiling, but, as may be supposed, soon withdrew it; there were, however, two other pieces, a leg and a shoulder; into these it struck its claws and carried them off. After a short time it returned for more, but was shot by one of the men, who by this time had recovered from their astonishment at such an unwelcome and unexpected intrusion.

The breeding time of the Bearded Vulture occurs in Europe during the first months of the year, and in Asia and Africa during the spring. The nest is variously constructed, and we cannot do better than give the words in which those built in Arabia were described by our guides: "The nest of this robber and son of a robber (may Allah curse him and all his generations!) is placed where the sons of Adam can rarely penetrate, and is formed of a huge bed of goat's hair, gathered from the animals the wretch has slaughtered. The nest contains but two eggs, with a white shell, spotted all over with the blood of its prey." The brother of Dr. Brehm was the first European who succeeded in finding one of the many nests built by these birds amid the solitudes of the Pyrenees. This eyrie was about five feet in diameter at its base and its height three feet; the interior was about two feet wide and five inches deep; the sides were constructed of branches varying greatly both in length and thickness; upon these was a heap of twigs, in the middle of which the hollow of the nest was excavated; the interior was lined with a bed of various kinds of hair. The eggs of such European species as we have seen were large and almost spherical, with a coarse-grained, dirty white shell, spotted with reddish brown, dark grey, or ochreous yellow. As may be easily imagined, the capture of these huge and fierce birds is attended with much difficulty; the Swiss endeavour to lure them down during the winter by sprinkling blood upon the snow, or laying a trap baited with carrion near the spots upon which the eyries are built.

The TRUE VULTURES (*Vultures*) have stout powerful bodies, which are of unusual breadth at the breast; the wings are long, broad, and rounded, their fourth quill being of greater length than the rest; the tail is of medium size, and slightly rounded at its extremity; the individual quills are stiff and ragged, or split towards their tip; the legs are strong, of moderate length, and destitute of feathers; the toes, though long and powerful, are almost useless for grasping; the talons are slightly bent and very blunt. The beak, which is as long as the head, is higher than it is broad, and straight except at its extremity, which terminates in a moderately long and very sharp hook; the mandibles bulge slightly outwards at their margins. The plumage is composed of very long and broad feathers, and does not entirely cover the body, the head and neck are either quite bare or overspread with a slight growth of hair-like down. In some species the legs and belly are covered with down, intermingled upon the latter with long narrow feathers. The bare or thinly-covered portions of the body are often brightly coloured, but the plumage itself is usually sombre and indistinct in its coloration, though occasionally variegated. The eyes are large and expressive, the formation of the nostril differs considerably according to the species. All the members of this group see, hear, and smell with great acuteness, and their intelligence is by no means inferior to that of the Bearded Vulture.

The CONDORS, or WATTLED VULTURES (*Sarcorhamphi*), as three of the largest species of True Vultures have been called, are at once recognisable by their comparatively slender bodies, long narrow wings, and long tails. The tarsi are high and the toes large; their neck is of moderate size, and the head long; the beak, compressed at the side, terminates in a powerful hook, which, in the male, is decorated above the base of the upper mandible with a kind of fleshy comb, and, in the region of the chin, with wattles or folds of skin. The nostrils are very peculiar in their formation, not having the usual division between them. The plumage is composed of small, brightly coloured feathers, and does not cover the whole body, some parts being left entirely bare. Unlike most of their family, the males of the three known species of Condors are larger than the females.

THE CONDOR.

The CONDOR (*Sarcorhamphus gryphus*, or *Sarcorhamphus condor*) has been the subject of even more extravagant tales than its European representative, the Lämmergeier, as its name of Gryphus or Griffin indicates; indeed, the travellers of former times seem to have thought no anecdotes too absurd to impose upon the popular mind either concerning the bird itself, or other productions of the countries it inhabits. The plumage of the full-grown Condor is principally black, enlivened by a slight metallic lustre; the upper part of the wings is black, but all the quills are tipped with patches of white, which become gradually so broad that the shoulder feathers are almost entirely white, and only black at their origin. The back of the head, face, and throat are blackish grey, the neck flesh colour, and the region of the crop pale red; the fold of skin and two warty lappets on either side of the throat of the male are bright red. In both sexes the neck is surrounded by a ruff of white feathers; the eyes are fiery red, the beak horn colour, and the feet dark brown. Humboldt gives the dimensions of the Condor as follows:—The body three feet three inches, span across the wings eight feet nine inches, and the tail fourteen inches. The female, according to the same authority, is one inch shorter, and nine inches less in breadth.

All the highlands of South America, from Quito to fifteen degrees south latitude, afford a home to this huge bird, whose powers of flight are stupendous; indeed, we are told on reliable authority that it is capable of soaring to an altitude of 22,000 feet above the level of the sea, thus surpassing any other member of the feathered race in its wonderful strength of wing. In Peru and Bolivia it lives and breeds upon the sea-coast, but is by no means so numerous as in mountainous districts. Except during the period of incubation, Condors fly in large parties, spending the entire day in sailing majestically about in search of food, and pass the night perched upon one of their favourite ledges or lofty pinnacles of rock. "Near Lima," says Mr. Darwin, "I once watched several Condors for half-an-hour together. They moved in large curves, sweeping in circles, ascending and descending, without once flapping their pinions. As they glided close to my head I intently watched from an oblique position the outlines of the separate and terminal feathers of their wings. If there had been the slightest vibratory motion these would have been blended together; but they remained distinct under the blue sky. If the bird wished to descend, the wings for a moment collapsed, and then, when again expanded with an altered inclination, the momentum gained by the rapid descent seemed to urge it upward with the steady, even motion of a paper kite."

The food of these gigantic birds consists principally of carrion; but they also destroy pumas, vicunas, sheep, and even calves, and thus work terrible havoc among the flocks and herds of the sturdy mountaineers, who are compelled to train their watch-dogs for the especial duty of barking incessantly as long as one of these formidable marauders is within sight of their flocks. Modern writers all agree in corroborating the statement of the Indians that this species never molests children, and as much as possible avoids the vicinity of man, though, if actually attacked, it displays extra-

ordinary courage, as the following extract from the journal of Sir Francis Head fully shows :—"In riding along the plain I passed a dead horse, about which were forty or fifty Condors. Many of them were gorged and unable to fly from repletion, several were standing on the ground, devouring the carcase, the rest hovering over it. I rode within twenty yards of them, and saw one of them displaying his strength as he lifted the flesh and tore out great pieces, sometimes shaking his head and pulling with his beak, and sometimes pushing with his leg. Got to Mendoza and went to bed. Wakened by one of my party who arrived. He told me that, seeing the Condors hovering in the air, he also had ridden up to the dead horse, and as one of these enormous birds flew about fifty yards off and was unable to go any further, he rode up to him, and, jumping off his horse, seized him by the neck. The contest was as extraordinary as the rencontre was unexpected. My companion said that he had never had such a battle in his life ; that he had put his knee upon the bird's breast and tried with all his strength to twist his neck, but that the Condor, objecting to this, struggled violently, and, moreover, that as several others were flying over his head he expected that they would attack him. At last he succeeded in killing his antagonist, and showed me with great pride the large feathers from his wings."

The preparations made by these birds for their young are extremely slight ; indeed, in most instances the two eggs laid by the female are deposited upon the bare rock. The eggs are large, the shell yellowish white, spotted with brown. When first hatched, the young are covered with a coat of grey down ; they grow but slowly, and remain under the protection of their parents long after they are fully fledged. Some tribes of Indians prize the heart and other portions of the body of the Condor as invaluable specifics for many serious maladies, and more than one modern writer has testified to their efficacy in certain complaints. When caged this gigantic bird has been known to become comparatively tame, and attached to its keeper.

THE CALIFORNIAN CONDOR.

The CALIFORNIAN CONDOR (*Sarcorhamphus Californianus*), as the second member of this group is called, is found throughout the mountains of California. According to Taylor, this bird is four feet six inches in length (of which fifteen inches belong to the tail), and eight feet four inches across the span of the wings. Its plumage is of an uniform dark brown or black, marked upon the wings with a triangular spot ; the breast is dirty white, as are the exterior feathers of the under surface of the wings ; the head, with the exception of a three-cornered stripe covered with small feathers, is bright lemon yellow ; the neck is of a dirty flesh colour. The habits of this species resemble those of its congeners, but it is found in larger numbers near the coast, and subsists principally upon fish.

THE KING OF THE VULTURES.

The KING OF THE VULTURES (*Sarcorhamphus papa*) has lately been separated from the preceding under the name of *Gyparchus*, owing to some slight variety in the shape of its nostrils. This bird, known to the writers of former days under the significant appellation, "King of the Vultures," is well worthy of the place thus assigned to it, both as regards its size and general aspect, as well as for the mastery it asserts over other members of its family. Its plumage is extremely beautiful ; the fore part of the back and upper wing-covers are bright reddish white, the belly and lower covers pure white, and the wing and tail deep black ; the ruff around the neck, and the outer web of the quills are grey ; the top of the head and face are covered with short, stiff, flesh-coloured bristles or feathers. The region of the eye exhibits a number of remarkable warts, which, like the folds of skin that pass over the back of the head, are dark red ; the cere, neck, and head are light yellow, the deep, lappet-like wattle is black, the beak yellowish white at its tip, bright red in the

middle, and black at its base; the feet are blackish grey, and the eye of a silvery whiteness. The plumage of the young is of an uniform nut brown, darkest upon the back and rump; the lower part of the thighs is white. The length of this species has been variously estimated—Tschudi gives it as thirty-two, Burmeister as thirty-four inches. Its breadth is about sixty-seven inches and a half, the wing measures twenty, and the tail nine inches. The female is larger than her mate, but has a somewhat smaller wattle.



THE CONDOR (*Sarcorhamphus gryphus*, or *Sarcorhamphus condor*).

The King of the Vultures is found throughout all the lowland provinces of South America, from thirty-two degrees south latitude as far as Mexico, Teja, and Florida, where it usually frequents the primitive forests or fertile plains. It is occasionally met with upon mountains, at an altitude of 5,000 feet above the level of the sea, but is never seen in barren districts or upon bare rocks. This species mainly subsists upon carrion, and morning has scarcely dawned before it may be seen sweeping over the face of the country, in search of the carcase of some creature that has fallen a victim to the jaguar, or one of the many beasts of prey that abound in large forests. Such a repast once found, the bird does not immediately fall to and gorge itself after the manner of most Vultures, but seats itself at some

distance upon the ground, or on a neighbouring tree, from whence, with head sunk between its wings, it casts longing glances at the tempting meal, and appears to be endeavouring to put a very keen edge indeed upon its appetite by this self-enforced abstinence, which often lasts for a full half-hour. This unusual proceeding is followed by an onslaught so vigorous, that the royal glutton forgets its usual vigilant precautions for its own safety, and becomes so completely gorged as to be unable to rise from the spot on which it has breakfasted. Schomburghk tells us that whatever birds may be feasting on a dead animal, the Vulture King no sooner arrives at the scene of action than the busy crowd precipitately retire, leaving it in undisturbed possession of the spoil, and only return in case a few scraps should be left after the unwelcome monarch is fully satiated. Many writers have endeavoured to



THE KING OF THE VULTURES (*Sarcorhamphus papa*).

prove the falsity of this statement, but it tallies exactly with our own observations. We have frequently witnessed similar scenes, in which the disappointed birds never ventured to interfere with the lord of the feast, but perched around upon the trees, devouring with their eyes what was unattainable in a more satisfactory and substantial manner. Opinions also differ considerably as to the habits of this species during the breeding season; we shall, therefore, only say that, according to Burmeister, the King of the Vultures builds upon trees, and that the eggs are white.

The GOOSE VULTURES (*Gyps*) are recognisable by their elongated body and long, slender wings. The tail is of moderate length, and the tarsi low. The neck, which constitutes the peculiar characteristic of this group, resembles in its formation that of the *Goose*, and is covered with white downy hair or bristles. The beak is comparatively long and feeble. The plumage is composed of

large feathers, and varies in its coloration, according to the age of the bird. The young are easily distinguished from their parents by the fact that the feathers which cover their bodies are long and narrow, and that their necks are enveloped in a streaming, ragged kind of frill. The members of this group are found throughout the whole of the Eastern Hemisphere.

THE TAWNY GOOSE VULTURE.

The TAWNY GOOSE VULTURE (*Gyps fulvus*), the only species inhabiting Europe, is about forty-one inches long, and ninety-nine broad; the wing measures twenty-six, and the tail eleven inches. Its plumage is almost entirely of a pale tawny colour, darker on the lower parts of the body than upon the back; the large wing-covers are surrounded by a broad white border, the tail-feathers and primary quills are black, the secondaries greyish brown, edged with reddish brown upon the outer web. The eye is light brown, the beak rust colour, and the feet light greyish brown. The plumage of the young is darker than that of the old birds, and the feathers upon their necks are long, brown, and narrow.

This species is frequently met with in the southern countries of Europe, and occasionally appears in the more central provinces of that continent; it also frequents Egypt, Nubia, Algiers, and Morocco; but although it is sometimes seen around the Himalayas, it is replaced in the lowland districts of Hindostan by the *Gyps Indicus* and *Gyps Bengalensis*, two very similar birds.

THE SPARROW-HAWK GOOSE VULTURE.

The SPARROW-HAWK GOOSE VULTURE (*Gyps Rüppellii*), the handsomest member of this group, is three feet two inches long, and seven feet six inches broad; the wing measures two feet, and the tail nine inches and a half. In the adult bird all the large feathers, except the quills and those of the tail, are dark brown, tipped with a dirty white, crescent-shaped patch, thus giving a chequered appearance to the body. The skin of the neck is greyish blue, and shades downwards at its sides into a reddish hue, these colours being distinctly visible through the few scanty feathers with which it is overspread. The eye is silver grey, the beak yellow at the base and grey at the tip, the cere black, and the feet dark grey. The frill around the neck is formed of short, hairy, white feathers. In the young birds the small feathers are dark greyish brown, with yellowish brown shafts, and the quills and tail-feathers blackish brown. The eye is pale reddish brown, the cere and beak are black, the latter tipped with blue; the feet are greenish grey; the ruff is composed of long, narrow, dark brown feathers, each with a yellowish shaft. Several years elapse before the young acquire the full plumage of the adult birds.

The Sparrow-hawk Goose Vulture inhabits Nubia, and all the central portions of Africa with which we are acquainted. The southern portion of that continent possesses another species, the *Gyps Kœlbi*, but of its distinguishing features we cannot speak with certainty. All the various species of Goose Vultures usually frequent mountain ranges, and build their nests on the rocks or upon trees. They live for the most part in very large flocks, which form extensive settlements during the breeding season, and constantly associate with a variety of other birds. In many respects they are inferior to the rest of the family, but their flight is light and elegant, and they walk with such rapidity that a man must run very fast indeed in order to compete with one of them on *terra firma*. In disposition all are violent and mischievous, and so extremely quarrelsome that battles and disputes are of constant occurrence between them and other Vultures; even those of the same species do not live on much better terms, and often engage in such deadly encounters that they appear entirely regardless of danger, and will allow a man to approach close to them. We have heard, on reliable authority, of an instance in which a shepherd was compelled to employ the "argument of a thick stick" to a couple of Goose Vultures, with which he laid about him very freely before he could persuade them to relin-

quish their hold upon each other, and retire from the field. According to our own observations, these birds do not begin their search for carrion until the day is far advanced. When they have found a carcase, they at once commence upon the entrails, plunging their heads into the interior, and dragging out their favourite parts with great excitement and violence; Lázár tells us that they often fall upon sick and dying sheep, and kill the poor beasts in this revolting manner.

In Europe the Goose Vulture breeds about March, and places its nest, which is formed of small branches, upon a rock. Many couples often build but a few paces from each other, and it is not unusual to see the nests of the Black Stork and some species of Eagles forming part of their settlements. The brood consists but of one coarse-shelled white egg, which in size resembles that of a Goose. Both parents assist in the somewhat lengthy process of incubation, and tend their little, round, woolly ball of a nestling with great devotion and patience, for so weak is it when it first sees the light, that three months often elapse before it is able to fly. It would be almost impossible to render one of these birds really tame, but we have heard of an instance in which a Goose Vulture became so much attached to an old mastiff belonging to its master, that when the dog died its feathered companion refused to devour the body, even when very hungry, and, after pining for a few days, expired, apparently through grief at its loss. The feathers of the Goose Vulture are much esteemed in Egypt, and large sums, we are told, were formerly paid by Turkish merchants for articles of dress made with them by some tribes of Arabs.

The CRESTED VULTURES are distinguished from the above group by their strength and compactness of body, as well as by their muscular neck, large head, powerful, eagle-like beak, and broad wings. Their plumage is also thicker and softer than in the Goose Vultures; the head is covered with short, curly, wool-like down, which is prolonged at the nape into a kind of crest, the neck and part of the throat are bare, but the lower part is ornamented with a frill, formed of large, broad, dark feathers.

THE COWLED VULTURE.

The COWLED, or BROWN VULTURE (*Vultur cinereus*), as the European member of this group is called, is forty-one inches and a half long, and eighty-five broad; the wing measures twenty-nine, and the tail fifteen inches. The female is from one inch and a half longer, and from two to three inches broader than her mate. The plumage of this bird is of an uniform dark brown; the beak is marked towards the centre with red or violet, and the bare places on the throat with grey. The plumage of the young is glossier and darker than that of the adults, and the downy feathers on the top of the head are dirty whitish brown.

The Brown Vulture lives and breeds throughout all the most southern countries of Europe, and is met with in Africa in the regions around the Atlas Mountains. In Asia it is becoming extremely numerous, owing, it is supposed, to the rapid spread of disease amongst the cattle, whose carcases afford it a constant supply of food. The movements of this species are distinguished by a dignity that is very unusual amongst the Vultures. Its eye is fiery and intelligent, its bearing much like that of the Eagle, and its entire demeanour calm and almost majestic. Even when feeding, it exhibits none of the haste and violence observable in the Goose Vultures. Its principal food appears to be carrion, but it rarely touches the entrails, usually contenting itself with eating the flesh and swallowing the bones of the prey, which, we are told on good authority, it sometimes kills. Unlike those species above described, the Brown Vulture builds exclusively upon trees; its nest is large, and formed of thick boughs and small branches, the flat interior being lined with thin dry twigs. The one white coarse-shelled egg that constitutes the brood in size resembles that of the Goose. Both

parents tend their offspring with great care, and feed it upon flesh for four months, as until that time it is unable to fly. Attempts to render this bird tractable in captivity usually prove fruitless, but instances have been lately known in which the Brown Vulture has been made so tame as to run about a farm-yard on excellent terms with its inhabitants, and to allow children to play with it.

THE CRESTED VULTURE.

The VARIEGATED or CRESTED VULTURE (*Vultur occipitalis*) is an inhabitant of Central Africa, and is now regarded as the type of a distinct group (*Lophogyps*). In this bird the entire upper part of the body, breast, and tail, are covered with black feathers, edged with brown; the region of the



THE TAWNY GOOSE VULTURE (*Gyps fulvus*).

crop, belly, feet, and secondary quills are pure white, the primaries black. The crest is composed of white woolly down; the bare neck is blueish white, and covered in front with from eight to ten lines of small blackish warts; the eye is dark brown, the beak blackish blue at its tip, and reddish brown at its base; the lower mandible and cere are light blue; the feet pale purple, or reddish white. The plumage of the young is of an uniform dark blackish-brown colour, the eye is grey, the beak red, and the foot white. This species of Crested Vulture inhabits all the woodland districts of California, where it lives either alone or in pairs, and though by no means shy, seldom ventures near towns or villages. In its general habits it closely resembles its congeners already described.

The EARED VULTURES (*Otogyps*) may be regarded as by far the most powerful members of this voracious family; they are easily recognised by their large strong head and beak, large, broad, and slightly rounded wings, comparatively short tail, long legs, and very peculiar

plumage. As respects the latter, only the upper part of the body resembles that of other Vultures, the lower portion being covered with thick, long, greyish down, interspersed with a few long, narrow, sabre-shaped feathers. The legs are covered either with a similar, but longer and reddish yellow down, or with small feathers of the usual description. The head, back of the neck, and entire front of the throat are bare, and the chin is overspread with hair-like feathers. A reddish brown of various shades predominates in the coloration of the plumage; the quills and feathers of the tail have a *dark*, and those of the large wing-covers a *light* edge. Yellowish white feathers are often intermixed with those upon the back and nape. The young are distinguished by the darker hue of their plumage, and by the borders to the feathers on the lower part of the body being broader than in the parent birds. The eye is dark brown, the beak grey at its sides, deeper in shade upon the culmen and upon the lower mandible; the feet are light grey, as are the bare parts of the neck: the naked cheeks are violet. When the bird is excited these bare places become bright red.

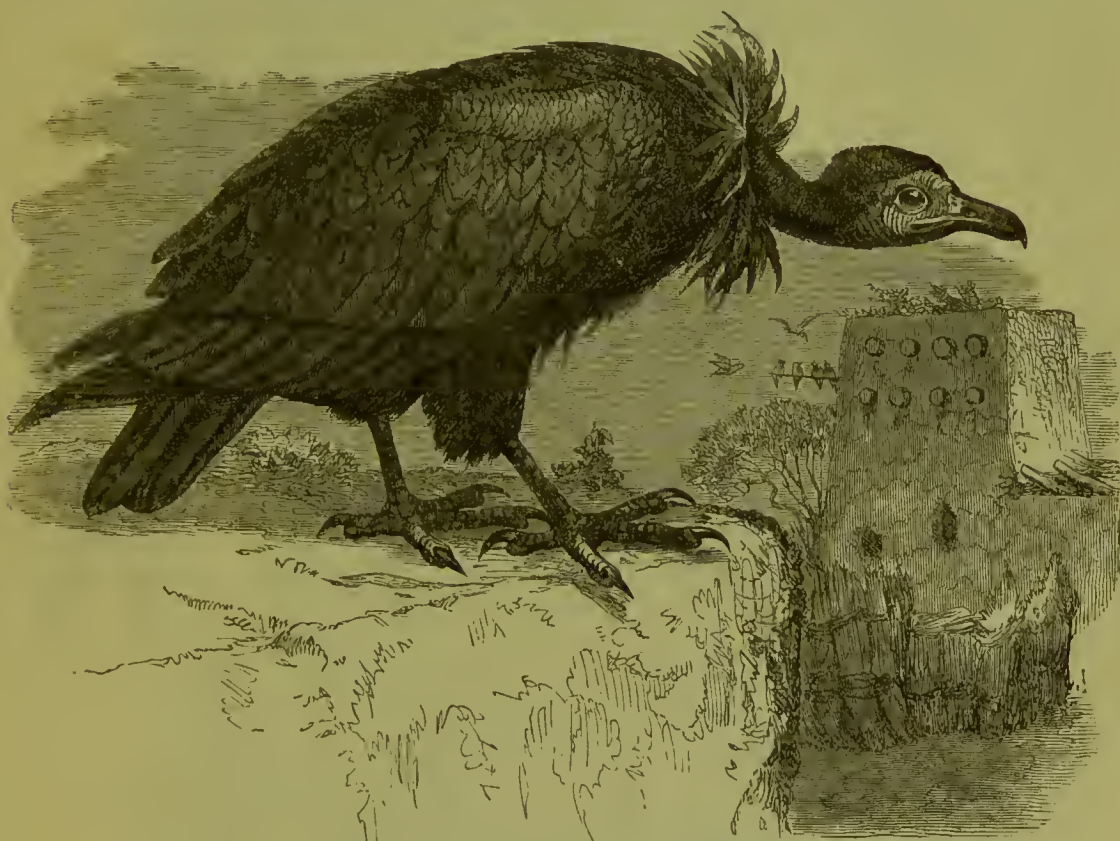
The Eared Vultures are found throughout Africa, and have occasionally visited Europe. In Asia they are replaced by the Sukuni, or Bald Vulture (*Otogyps calvus*). In their habits they are bold and social, and everywhere frequent the vicinity of man, coming down into the villages with the utmost confidence, in order to gather up the refuse thrown from the slaughter-houses and dwellings. With such extraordinary eagerness and voracity do these birds attack their prey, that (as Jerdon witnessed) a party of Vultures devoured the body of a dead dog, and picked the bones completely clean in the course of a few minutes. The toils of the day completed, they go in search of water, and, after preening themselves, lie down to roll in the sand and bask in the sunshine; this performance over they retire to their sleeping-place in a tree, where they perch bolt upright, with head drawn in, and tail hanging loosely down, until a late hour in the following morning. So large an amount of rest do these Vultures require, that they do not commence the duties of the day until about ten o'clock, and seldom seek for food after about four or five in the afternoon; and, so soundly do they sleep, that upon one occasion we rode around the tree in which a large party was perched without arousing them. A shot fired amongst them only had the effect of causing them to rise drowsily into the air, and fly heavily to a distance of about five hundred paces, when they again settled upon some branches to finish their interrupted slumbers. The flight of these birds is very graceful, and particularly quiet and easy. When about to descend they open their wings, stretch out their feet, and reach the ground in a direct line, without the slightest movement of their broad pinions. The nests are built close to each other, upon a ledge of rock, and thus form a kind of settlement, which is for the most part quite inaccessible, owing to the precipitous nature of the locality usually selected; we have, however, made various successful attempts to reach them with the help of a Hottentot guide, but found the stench from the eyries intolerable, and the surrounding rock perilously slippery, being, as it were, polished by constant friction. The brood consists but of one white egg, which is laid about October: the nestling, when first hatched, is covered with white down, and is not fully fledged until the month of January. The Eared Vulture thrives in captivity, and can easily be rendered very tame.

The RAVEN VULTURES (*Cathartæ*), a group of much smaller birds than those above described, are recognisable by their long beaks, pointed wings, and slender tarsi; their heads are either wholly or partially bare, and in some species covered with warts. The members of this group, as their name suggests, in many respects resemble the Ravens, and may be regarded as replacing those birds throughout South America, whilst such as are found in Africa and India associate freely with Crows, and lead a very similar life. The nest is usually built upon rocks or trees, and the brood consists of one, or at most of two eggs.

THE SCAVENGER OR EGYPTIAN RAVEN VULTURE (*Pernopterus stercorarius* or *Neophron Pernopterus*), by far the most celebrated bird of the above group, was called by the ancient Egyptians "Pharaoh's Hen," and was treated with a considerable amount of superstitious reverence. This bird has been in all ages a favourite subject for the pencil of Eastern artists, and even at the present day the Egyptians preserve some remnant of the respect with which this remarkable species was formerly regarded. It is distinguished from its congeners by its long, pointed wings, by its graduated tail, which is of considerable length, and by the peculiarities of its plumage. Its beak is slender, and more than half covered by the cere; the upper mandible terminates in a long but feeble hook; the foot is weak, and its middle toe almost as long as the tarsus; the talons are of moderate size and but slightly curved. The third quill of the wing exceeds the rest in length, the second is larger than the fourth, and the sixth longer than the first. The exterior tail feathers are only about two-thirds the length of those in the centre. The plumage is extremely soft, and composed of large feathers, which become much longer and broader upon the nape and upper part of the back. In colour this species varies much, according to the age of the bird, but there is no perceptible difference in this respect between the male and female. In the coloration of the adults a dirty white predominates, which shades into deep yellow on the throat and upper part of the breast, but becomes somewhat purer in its tint on the back and belly; the primary quills are black, the shoulder feathers grey, the colour of the eye varies from reddish brown to light yellow; the bare portions of the head, warts upon the throat, and upper part of beak are bright orange, the latter being tipped with greyish blue; the skin of the neck is paler than that of the head, and the wings are blueish red, or light greyish yellow. In young birds, on the contrary, the shoulders, upper wing-covers, a stripe across the middle of the breast and belly, the frill around the throat, the neck, the rump, and tail-feathers are grey; the throat, breast, belly, and quills of a blackish brown; the feathers on the top of the leg are chequered grey and black; those at the side of the neck have brown shafts and tips. The face, cere, and head are deep grey; the eye is dark brown, the beak black, and the leg light grey. The body of the female is from twenty-five to twenty-seven inches long; her breadth from sixty-one to sixty-three inches; the wing measures eighteen inches and the tail nine and a half. The Scavenger Vultures are frequently met with throughout all the southern countries of Europe, and are very numerous in Western and Southern Asia, and in all parts of Africa, with the exception perhaps of the western coast. Such of these birds as are met with in Europe, migrate to warmer regions, whilst those inhabiting Asia and Africa are stationary throughout the year.

It would be impossible to over-estimate the immense services rendered to man by the Scavenger Vultures, to whose appetite no kind of filth or refuse comes amiss. They devour carrion freely, but this forms by no means their principal subsistence; offal of all kinds they consume with avidity, and were it not that Providence had assigned to these most active birds the task of clearing away the garbage that the inhabitants of tropical and of some European cities are too indolent to remove, fever and pestilence would rage with unrelenting fury. Many writers speak of these invaluable benefactors to humanity in terms of strong disgust, but for our own part we consider this by no means warrantable. Ugly they certainly are, and the odours they spread around them somewhat of the strongest; but there is such a thing as the *beauty of fitness*, and, to our minds, this is possessed by the Scavenger Vultures in an eminent degree, so exactly are they adapted to the part they have to play in the economy of Nature. So totally are these birds destitute of fear, that they not only approach, but enter the houses requiring their ministrations, and we have frequently seen them busied in clearing away the refuse strewn about the tents of the Arabs, or accompanying caravans for a whole day in the hope of obtaining the scraps thrown away by the travellers. Unlike

many of its congeners, the Neophron does not usually smear itself over with filth whilst eating ; it even appears to exercise a certain care in this particular, as it steps quietly about, feeding after the manner of a Barn-door Fowl. When satiated it retires to a quiet tree or rock, and there remains in a kind of indolent doze, while the work of digestion is going on, a process which often occupies several hours. When about to fly it springs from the ground with considerable force, and, after a few sharp strokes of its wings, floats slowly and gracefully through the air, without any further movement of its wings. This species is very sociable, and flies about either in pairs or small parties, which usually form a settlement during the breeding season, building their nests as near to each other as possible, upon rocks, pagodas, tombs, or similar situations. The nest is made of

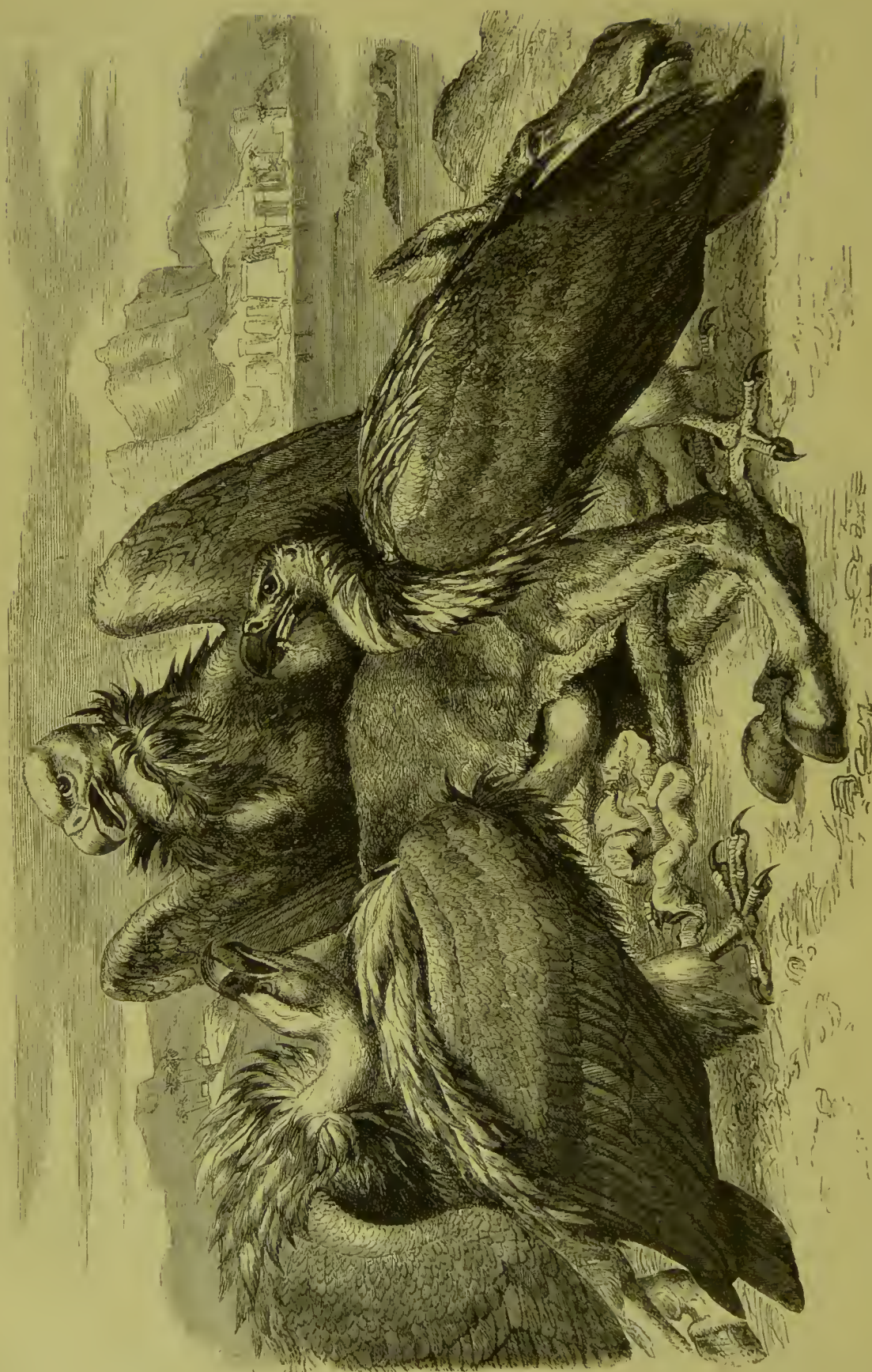


THE MONK VULTURE (*Neophron pileatus*).

twigs and a variety of materials, of which rags often form a part. The brood generally consists of two long eggs of a yellowish white colour, spotted with yellowish or reddish brown ; we have seen them also marbled all over with deep crimson lines. The young are covered with greyish down when first hatched, and are fed with food regurgitated from the crop of the parent birds ; many months elapse before they are fully capable of providing for their own wants. If trained while young, the Scavenger Vulture is as tractable as a Barn-door Fowl, and will learn to follow its master about with the affection of a dog. According to old Gesner, the gall of this species was regarded in his time as an infallible remedy for many most dissimilar complaints.

THE MONK VULTURE.

The MONK VULTURE (*Neophron pileatus*) resembles the bird last mentioned in several respects, but differs from it in many particulars ; the beak being comparatively short and the wings broader ;

AFRICAN VULTURES (*Gyps fulvus*)

the tail projects in a straight line; the forehead and the back of the head and nape are covered with a short woolly growth of feathers; the bare portions of the face and throat are also larger than in the Scavenger Vulture; the apertures of the ears are well developed, indeed almost muscular, and the fore part of the throat is covered with wart-like excrescences. The plumage is of an uniform chocolate brown, while the soft feathers at the back of the head are grey. The beak is greyish blue, darkest at its tip; the foot pale grey, the cere light violet, the bare head and throat are



THE SCAVENGER, OR EGYPTIAN VULTURE (*Pernis ptilorhynchus* or *Neophron Pernis*).

blueish red. The young are recognisable by the comparative paleness of their tints, and the dark brown colour of the back of the neck, the smooth skin upon the throat, and their less conspicuous ears. The length of this species is twenty-six, its breadth sixty-six inches; the wing measures seventeen inches, and the tail nine and a half.

The Monk Vulture is met with throughout almost the whole of the African continent, but is especially numerous upon the banks of the Blue and White Nile and on the shores of the Red Sea. So common is it in Abyssinia and Massowah, that large parties are often seen perching about the roofs and trees, as the crows do with us, or picking up their food around the houses with the utmost confidence and fearlessness. Before the natives have left their huts in the morning, these

active servants are at the door, ready to begin their task of cleansing, as soon as the family will allow them to enter and remove whatever filth may have accumulated. So extremely feeble is the beak of these birds, that they seem to be almost entirely dependent upon man for the means of subsistence; and those who have never visited tropical countries can scarcely imagine how ably and perseveringly they perform the work that has been assigned to them. The movements of the Monk Vultures are active, and their habits very social; even during the breeding season the parties do not separate, but form settlements upon such groups of suitable trees as are at some distance from the towns and villages. The nests are usually placed upon the higher branches, and do not exceed one foot in diameter; they are flat in shape, and formed of twigs very nicely woven together; the interior is so small as to be capable of containing but one nestling. The solitary egg is round, coarse-shelled, and usually of a greyish white, thickly sprinkled with yellow spots. Both parents assist in the work of incubation, the male bird relieving his mate during the mid-day hours. The young grow very slowly, and after leaving the nest, subsist, according to Heuglin, upon such food as they can pick up on the sea-shore or river banks.

THE URUBU, OR TURKEY BUZZARD.

The URUBU (*Cathartes aura*) is the first of the two species of American Vultures that we have selected from amongst the many varieties inhabiting the western continent, all of which, though differing somewhat in appearance, bear so close a resemblance to each other in their habits and mode of life that we shall content ourselves with speaking of them collectively. The Urubu or "Turkey Buzzard," as it is called in North America, is distinguished by its short thick beak, graduated tail, and low tarsi. The head and bare parts of the neck are of a flesh colour, deepest at the base of the beak, and become gradually paler towards the nape; the top of the head is violet. The skin upon the brow and nape hangs in thick folds, and that of the throat is overspread with orange-coloured warts; a few bristle-like feathers are scattered over the crown of the head and around the ears; the entire body, wings, and tail are brownish black, and gleam with a metallic lustre. The beak is pale red, and partially covered by the cere, in the upper part of which the large oval nostrils are situated; the eyes are bright red, and have a blueish grey circle around the pupil. The length of this species is about twenty-two and its breadth sixty-three inches; the wing measures nineteen inches and the tail ten and a half.

THE GALLINAZO.

The GALLINAZO (*Coragyps atratus*), as the second species is called, possesses a rather longer and thinner beak, comparatively high tarsi, and a shorter tail, which is straight at its extremity. The bare head and fore part of the throat are dark grey, deepening in some parts into black; the body, wings, and tail are pale black, shaded with reddish brown. The wing-feathers are white at their origin, the eyes dark brown, the beak blackish brown, whitish at the tip. The top of the head, from the base of the upper mandible to the nape, is covered with a regular succession of folds of skin, placed one behind the other. The length of this bird is twenty-three, its breadth fifty-two inches; the wing measures fifteen, and the tail about seven inches.

Both the Urubu and Gallinazo are found in large numbers throughout the whole of the American continent, and both appear to avoid the summits of mountain ranges. The Urubu lives for the most part in the vicinity of the coast; whilst the Gallinazo, on the contrary, frequents the towns and villages, occasionally, but rarely, appearing in mountainous districts. So highly do the Americans value the services rendered by these Vultures, that in some districts it is considered a punishable offence to kill them. Wilson tells us that "the Turkey Buzzards are

gregarious, peaceable, and harmless, never offering any violence to any living animal, or, like the plunderers of the *Falco* tribe, depriving the husbandman of his stock. Hence, though in consequence of their filthy habits they are not beloved, yet they are respected for their usefulness; and in the Southern States, where they are most needed, they, as well as the Black Vultures, are protected by a law which imposes a fine on those who wilfully deprive them of life. They generally roost in flocks, on the limbs of large trees; and they may be seen on a summer morning spreading out their wings to the rising sun, and remaining in that posture for a considerable time. Pennant conjectures that this is 'to purify their bodies, which are most offensively fetid.' But is it reasonable to suppose that *that* effluvia can be offensive to them which arises from food perfectly adapted to their nature, and which is constantly the object of their desires? Many birds, and particularly those of the grani-



THE URUBU (*Cathartes aura*).

vorous kind, have a similar habit, which doubtless is attended with the same exhilarating effects as an exposure to the pure air of the morning has on the frame of one just risen from repose. These birds, unless when rising from the earth, seldom flap their wings, but sweep along in ogees, and dipping and rising lines, and move with great rapidity. They are often seen in companies, soaring at an immense height, particularly previous to a thunder-storm. Their wings are not spread horizontally, but form with the body a slight angle upwards, the tips having an upward curve. Their sense of smelling is astonishingly exquisite, and they never fail to discover carrion, even when at the distance of several miles from it. When once they have found a carcass, if not molested, they will not leave the place until the whole is devoured. At such times they eat so immoderately, that frequently they are incapable of rising, and may be caught without much difficulty; but few that are acquainted with them will have the temerity to undertake the task. A man in the State of Delaware, a few years since, observing some Turkey Buzzards regaling themselves upon the carcass of a horse

which was in a highly putrid state, conceived the design of making a captive of one, to take home for the amusement of his children. He cautiously approached, and springing upon the unsuspecting group, grasped a fine plump fellow in his arms, and was bearing off his prize in triumph; when, lo! the indignant Vulture disgorged such a torrent of filth in the face of our hero, that it produced all the effects of the most powerful emetic, and for ever cured him of his inclination for Turkey Buzzards."

On the continent of America, this species inhabits a vast range of territory, being common, it is said, from Nova Scotia to Terra del Fuego. How far to the northward of North California they are found, we are not informed, but it is probable that they extend their migrations to the Columbia, allured thither by the quantity of dead salmon which, at certain seasons, cover the shores of that river.

Mr. Darwin, who observed this bird in New Jersey, states "that the Turkey Buzzard is a solitary bird, or at most goes in pairs. It may at once be recognised from a long distance by its lofty, soaring, and most elegant flight. It is well known to be a true carrion feeder. On the west coast of Patagonia, among the thickly wooded islets and broken land, it lives exclusively on what the sea throws up, and on the carcases of dead seals; and wherever these animals are congregated on the rocks, there the Vultures may be seen."

The Gallinazoes are extremely active; they fly lightly, and can rise with ease to a considerable height in the air; when perched they usually draw their head down between their shoulders, and allow their plumage to hang loosely about their bodies; but when upon the ground they hold themselves erect, and walk with very much the same air as a Turkey-cock. We learn from Audubon, who made a variety of experiments on this subject (see Introductory Chapter), that these Vultures discover their food by sight alone, and are almost or entirely without the sense of smell. Many writers have maintained that they subsist altogether upon garbage and carrion, but both Audubon and Humboldt concur in the statement that they will occasionally kill their own prey. The latter describes the manner in which they seize young crocodiles, about seven or eight inches in length, either upon the land or in shallow water; and tells us that the small reptile endeavours to confront its foe by rising on its fore-feet, stretching up its head, and literally grinning defiance through its long sharp teeth. It not unfrequently happens that, while thus engaged in keeping one of its feathered enemies at bay, the spirited little creature is snapped up by an Urubu, who has come up quietly and unobserved to watch the encounter. Large numbers of eggs are also devoured by the American Vultures, who frequently build their eyries in the immediate vicinity of the nests of Wading or Swimming Birds for the express purpose of thus obtaining a constant supply of food for their young. Most naturalists are now agreed that both the Gallinazo and Urubu lay their eggs in clefts of the rock, holes in the ground, or in hollow trees, as such spots afford the best protection against the inclemency of the weather. In Texas and Mexico they usually select a hillock near marshy ground, and merely scratch a hole beneath a bush wherein to lay the two eggs of which a brood consists. Both parents sit alternately for thirty-two days, and feed each other from the crop during that period. These birds are easily tamed, and when in a state of domesticity exhibit towards their master all the fidelity of a dog.

THE OWLS.

THE OWLS (*Striginae*) constitute the last division of the extensive order RAPTORES to which we have to call the attention of our readers. These remarkable birds possess an apparently heavy, but, in reality, slender and by no means muscular body, and a large, broad, thickly-plumaged head. Their short, very decidedly arched beak terminates in a hook, and is partially covered by a cere, which

is so thickly clothed with stiff bristle-like feathers as to be entirely concealed. The large eyes, which look directly forward, are without the bony ridge projecting from the brow, usually so characteristic of the Falconidæ, and are encompassed by a circle of slender, radiating, hair-like feathers, forming a *facial disc*. The ear is highly developed, and often furnished with a kind of lid; the wings are long, broad, and wedge-shaped; the tail broad and of various lengths; the short tarsi and toes are covered with feathery plumes or hairs; the outer toe is reversible, as in the Parrot, and the claws are long and sharp. The plumage of the body is composed of long, broad feathers, and is so extremely soft and downy as to render the flight of an Owl almost noiseless; the coloration is in most species sombre, and scarcely distinguishable from the bark of the trees on which they perch; in some few, on the contrary, it is comparatively bright and varied. All the members of this division possess extraordinary power of seeing in the dark, and hear with such acuteness that they can readily detect and obtain their prey in situations where sight seems impossible. As regards intelligence they are certainly behind the rest of the order; and, though generally peaceful in their disposition, will, if excited, fall upon and devour such of their companions as are aged or sick, not sparing even their own offspring. Their flight is usually slow, and their movements upon the ground extremely clumsy, but when in the trees they hop about and spring from branch to branch with great agility, sometimes amusing themselves by ducking their heads and throwing their bodies into a great variety of ludicrous attitudes. Every quarter of the globe is inhabited by these predatory birds, some species being as much at home on the icebergs of the Polar regions as others are beneath a tropical sun; they are sometimes found upon mountains, at an altitude of 15,000 feet above the level of the sea, and, though woodland regions are their favourite resorts, frequent both populous districts and desert plains. Although generally classed collectively as "Night Birds," some few species obtain their food during the day, and confront the sunlight with the utmost ease; still, they are for the most part nocturnal, concealing themselves in holes and cavities until the hour of twilight has arrived, and, if forced into the full glare of day, sit blinking and staring in a state of helpless bewilderment most amusing to behold. All reject carrion, and only devour such food as they have themselves killed, subsisting principally upon small quadrupeds, birds, and insects; a few will even eat fish. Many species are capable of living without water for months at a time, though they drink it readily, and often bathe freely. Most of the members of this sub-order lay from two to seven round white eggs, which are deposited in holes of trees, rocks, or buildings. The young remain for a considerable time under the care of their parents, by whom they are protected with great affection and courage.

The DAY OWLS (*Surniæ*) are recognisable by their small head, slender body, long tail and wings, and compact plumage. All their senses are well developed, and in intelligence they far exceed any of their nocturnal relatives.

THE SPARROW-HAWK OWL.

The SPARROW-HAWK OWL (*Surnia Ulula*, *Surnia funerea*, or *Surnia nisoria*), often called the Falcon Owl, on account of some slight resemblance to that family, is one of the best known members of this group, and is distinguished from its congeners by its broad flat head, and small face, which is without the circle of feathers around the region of the eye, possessed by most of the species; its wings are slender and pointed, its tail long and conical. The beak is short, powerful, higher than it is broad, and curves downwards from its base; the hook in which the upper mandible terminates, overlaps the lower one; the margins of both are slightly incised, and the latter has a deep notch at its tip. The tarsi are completely covered with feathers, and the toes armed with

short and very sharp claws ; the eyes and apertures of the ears are large. The plumage, which is rich, soft, and glossy, is much thicker than that of the majority of Night Owls ; the feathers on the sides of the head are held erect, and thus make the face appear fully to equal the body in breadth. The outer web of the anterior quills is denticulated like a saw, while the inner one is of velvety softness. The cry of this species resembles that of the Kestrel ; when angry it snaps with the beak, after the manner of other Owls, but, unlike most of the members of the family, its eyes are kept open in the day-time, and it rather seeks than avoids a strong light. The face of the adult male is whitish grey, and marked with two black streaks, one before and one behind the ear, forming a sort of crescent. The top of the head is brownish black, each of the feathers in that region being tipped with a round white spot, which increases in size towards the back of the neck ; the nape and a spot behind the ear are pure white ; the feathers upon the back are white, edged and striped with brown. The breast, sides, and belly are white, marked with blackish brown ; the throat is white, traversed by a dark stripe ; the quills and tail-feathers are mouse grey, and for the most part streaked with white. The beak is dingy yellow, tipped with black, and the eyes of a beautiful brimstone yellow. Considerable deviations from this coloration are of frequent occurrence, but the young closely resemble their parents. The length of this species is from fifteen to sixteen, and its breadth from twenty-nine to thirty-one inches ; the wing measures nine and the tail seven inches.

The Sparrow-hawk Owls are met with extensively throughout all the countries of the extreme north, and frequently visit the central portions of the American and European continents. Birch, fir, and pine forests afford them the retreats they prefer, and where these are found they will often ascend to a considerable height in mountain ranges. Wallengen tells us that their eyries are built upon fir and pine trees, and are formed of leaves and twigs, intermixed with dry moss ; and that the six or seven round white eggs that constitute a brood are laid early in the spring. Some naturalists are of opinion that they lay but two eggs. We learn from Richardson that large numbers of these birds are killed by the fur hunters, and that they subsist principally upon insects and mice ; they also devour Ptarmigans, and when in pursuit of the latter are so bold that, at the sound of the sportsman's gun, they congregate around him in the hope of securing his birds as they fall ; they catch mice by waiting quietly seated near their holes until they come out, and never seize them whilst on the wing. They appear to have no fear of man, and are constantly seen around the watch-fires made by the hunters in their encampments. Such Sparrow-hawk Owls as visit Central Europe arrive about March, and depart early in the autumn ; here as elsewhere they subsist principally upon mice, and frequent forests and woodland districts. The flight of this bird, unlike that of most Owls, is rapid and easy, but upon the ground it hops somewhat clumsily.

THE SNOW OWL.

The SNOW OWL (*Nyctea nivea*), as the largest of the diurnal species is called, frequents the same countries as the bird above described, and, like it, wanders to Southern Europe ; but the Polar regions are its actual home, and there it may be seen living, not only inland, but on the coast, sitting in large numbers upon the icebergs, or scrambling with hasty steps over the surface of the ice-covered sea. The distinguishing features of the Snow Owl are its small head, well-developed ear, and thickly-plumed feet ; the wing, in which the third quill is the longest, is of moderate size ; the tail long and rounded ; the beak powerful, and its hook short ; the plumage thick, but not so soft as that of some of its congeners. The length of this species is from twenty-six to twenty-seven, and its breadth from fifty-six to sixty inches ; the wing measures twenty-one, and the tail ten inches. The coloration of the plumage varies considerably, according to the age of the

birds ; such as are very old are either entirely white, or have a few small brown spots upon the forehead and quills ; the younger the bird, the more distinct are these brown markings. The eye is a rich yellow, and the beak greyish black.

During the entire summer the Snow Owl remains in its native land, but when heavy snow begins to fall, and renders search for food impossible, it departs to warmer latitudes. According to Radde, the females are the first to leave, but are very shortly followed by their mates. When perched these birds look much like other members of their family, but when in flight exhibit a rapidity of motion and dexterity in steering their course, far exceeding that possessed by any other species of Owl, and so remarkably bold are they that, if wounded by a shot, they at once bear down upon the sportsman who has molested them, for the purpose of revenging the injury, and will also attack dogs, darting upon them, and seizing them after the manner of a Falcon. Whilst tarrying in Central Europe, they subsist principally upon lemmings, and should these prove scarce, attack squirrels, marmots, and other small quadrupeds : they pursue Wild Pigeons, Ducks, and Ptarmigans with great ardour, and are so daring in contesting the latter delicacies with the hunters that, according to Blakeston, they have been known to snatch the coveted prize out of the sportsman's bag, whilst it hung suspended at his back. Audubon had the good fortune to see some of these interesting birds busied in what we should have imagined an uncongenial occupation for an Owl, namely, "angling for fish." He tells us that whilst engaged one morning in shooting Wild Ducks on the banks of the Ohio, he observed a Snow Owl lying upon the rocky bank, apparently asleep, with its head turned towards the water : whilst noticing it, a fish rose to the surface, and, with the rapidity of lightning, was caught in the claws of the wily bird, who at once made off with its prize to a few yards' distance, and having devoured it, immediately returned to play the same clever trick upon other victims. In the winter season this species often seeks its food during the night, and so much vigilance does it display in these nocturnal excursions, that no object seen in the air is allowed to pass without proper investigation as to its edible properties. Holboell mentions having amused himself one moonlight night by constantly throwing up his hat to attract the attention of a Snow Owl, and was rewarded by inducing it to follow the unfamiliar object for nearly a quarter of a mile. The cry of this bird is harsh, and much resembles that of the Crow. The breeding season commences in June ; the eggs, from seven to ten in number, are of a dirty white, and are deposited in a hole in the ground lined with a little dry grass. The young are fledged by the month of August, and are tended till this period with great affection by both parents. The female, who is also carefully fed by her mate during the period of her seclusion, exhibits great affection for her little family, and should a man approach so near the nest as to excite her suspicion, will fall to the earth, and lie as though dead or lamed, in the hope of diverting the stranger's attention from the brood to herself. Attempts to rear this remarkable Owl have hitherto usually proved unsuccessful.

The STONE OWLS (*Athene*) are small birds, with moderate sized heads, short round wings, which do not extend beyond two-thirds of the long straight tail, long legs, powerfully armed toes, and short beaks ; the latter are compressed, and the upper mandible terminates in a hook. The aperture of the ear is smaller, and the feathers which surround it longer than in other diurnal species ; the plumage is compact, and only partially covers the legs, the toes being overspread with a hair-like growth.

THE STONE OWL PROPER.

The STONE OWL PROPER (*Athene noctua*) is about eight inches long, and twenty broad ; its wing measures five inches and a half, and the tail three and three-quarters. The female is slightly

larger than her mate. In the adult of both sexes the upper part of the body is dark mouse grey, irregularly spotted with white; the face is greyish white, the belly whitish, spotted with brown, except at the vent; the wing and tail-feathers are reddish yellow, spotted with white; the beak is greyish yellow, the foot yellowish grey, and the eye of a brimstone yellow. The plumage of the young is darker than that of their parents.

This bird inhabits the central parts of Europe as far as the south of Sweden, and is found throughout almost the whole of Asia. In some of the southern countries of Europe, it is replaced



THE SNOW OWL (*Nyctea nyctea*).

by the celebrated bird known to the Greeks as "Minerva's Owl" (*Athene indigena*). Two other varieties are also commonly met with, the one in Spain, the other in Northern Africa. Mountainous districts are avoided by the Stone Owls, who prefer living in the immediate vicinity of man, and often build their nests upon the roofs and steeples of the villages they frequent. The day is usually passed in some quiet nook, such as a tomb, old wall, or similar situation, and at night they sally forth in search of food, striking terror into the heart of many an ignorant peasant, as their harsh, unearthly cry resounds through the silence of the night. To such an extent do some of the peasants in Germany carry their absurd superstition respecting this Owl, as actually to

imagine that its notes distinctly express the words, "Komm mit, komm mit auf den Kirchhof, hof, hof," or, in plain English, that the sepulchral voice is forewarning either themselves or some members of their family of impending death, and speedy consignment to the tomb. In the southern parts of Europe, where Stone Owls are met with much more frequently than in Germany, familiarity has bred contempt, and these old wives' tales are entirely unknown. The flight of this bird is very peculiar, owing to the shortness of its wings, and much resembles that of a Woodpecker. Whilst perched it usually draws its head down upon its shoulders; but if attracted by some object, for it sees excellently well in the daylight, it sits erect and peers at it with so keen and intelligent an eye as fully to explain the reason that to this species was assigned the honour of attending on the Goddess of Wisdom.

The Stone Owls are extremely social, and live on very peaceable terms with their companions, dwelling in the same hole, and going together in search of prey. Twilight has scarcely set in before their voices are heard as they sweep about in pursuit of the small quadrupeds, birds,



THE STONE OWL (*Athene noctua*).

and insects upon which they subsist; the whole night is passed in pursuit of food, very much to the annoyance of many a weary sleeper, who is roused from pleasant dreams by the sudden dash of their bodies against the window as they vainly endeavour to get to the fire or taper burning within. During the breeding season they become extremely restless and noisy, and utter their strange cry throughout the whole day. The eggs, four to seven in number, are deposited about May in a hole in some old tree or building; the nestlings are hatched in a fortnight after the eggs are laid, and are reared upon mice, young birds, and insects. These Owls are frequently captured in Italy for the purpose of domestication, as they are easily tamed, and render themselves eminently useful in houses and gardens, by keeping the premises clear of mice and a variety of noxious insects. It is no uncommon thing to see three or four of them fastened to a perch in the stall of an Italian cobbler or tailor, who amuses himself by observing them as he plies his trade. These prisoners usually display great affection for their master, who rears them upon *polenta* when meat is beyond his means.

The BURROWING OWLS (*Pholeoptynx*) are a family of very remarkable birds, about the

same size as and closely allied to the Stone Owls, but differing from these latter in their superior length of leg, and in some other trifling respects. The members of this group are recognisable by their moderate size, round head, large eyes, and elongated beak, rather arched at its roof, and terminating in a hook; the lower mandible is blunt at its tip, and slightly incised upon the margins. The wings, in which the fourth quill is longer than the rest, are long, powerful, and rounded at the extremity; the tail is short and straight, the tarsi high, slender, and only sparsely feathered in front, the sides and sole being covered with smooth skin; the toes are defended by rough horny plates interspersed with bristles; the talons are very slightly curved. The plumage, which is composed of small, soft, silky feathers, lies very compact; the feathers on the cheek-stripes are stiff and bristlelike, and the rest of those upon the face small and delicate.

THE BRAZILIAN OR RABBIT OWL.

The BRAZILIAN OR RABBIT OWL (*Pholeoptynx cunicularia*)—called by the natives the Caruje—is about eight inches long, and twenty-two broad; the wing measures six and the tail three inches. The upper part of the body is reddish brown, marked with oval and round white spots; the chin and eyebrows are white, the lower part of the neck reddish yellow, spotted with greyish brown, the breast greyish brown marked with yellow; the lower part of the belly is yellowish white; the eye is yellow, the beak pale greenish grey, as are the legs. This bird inhabits the Brazils, and is replaced in North America by

THE PRAIRIE OWL.

The PRAIRIE OWL (*Pholeoptynx hypogæa*), a species so closely resembling it both in appearance and habits, that one description will suffice for them both. The Burrowing Owls are found in great numbers throughout the extensive plains of the American continent, perching upon hillocks, or scrambling in and out of the holes in which they live; they constantly frequent such excavations as have been made by anteaters, armadilloes, or prairie dogs, and instances have occurred in which they have been seen quietly creeping in and out of a hole tenanted, not only by the last-mentioned quadruped, but by a rattlesnake. Like the Stone Owl, they are capable of enduring the full light of the sun, and display considerable agility in evading pursuit; the colour of their plumage aids them considerably, as it closely resembles that of the ground on which they sit. They walk with ease and rapidity, and fly in an undulating course, but only remain for a short time upon the wing; they never frequent trees, but pass their lives almost entirely upon the earth. Whilst seated they indulge in all the strange attitudes, bowings, and tossings of the head with which their congeners amuse themselves, and greet the approach of a stranger with a fixed stare, their eyes shining like stars. Whoever attempts to capture one of them generally finds that his labour has been spent in vain, as they easily elude pursuit, and if hard pressed take refuge in one of the many holes that abound in their favourite haunts. They are remarkably social, even during the breeding season, and several pairs frequently lay their eggs in such burrows as are near together. The Brazilian species deposits its three white eggs upon the bare ground of the cavity selected, whilst the North American Prairie Owl on the contrary, according to Townshend, lays four whitish eggs, and lines its hole with fine grass; both subsist principally upon mice, snakes, lizards, and grasshoppers, and will occasionally eat crabs or such other inhabitants of the water as find their way to dry land. The North American Indians declare that these Owls retire into their holes about the end of August, in company with the prairie dogs, and there sleep away the winter months, but we should be inclined to imagine that their undeniable disappearance during the cold season is occasioned by their having gone for a time further south.

The SPARROW OWLS (*Microptynx*), so called from their diminutive size, are by far the most pleasing and elegant group of their family, and are found throughout all parts of the globe, with the exception of Australia; in the southern portions of Asia, America, and Africa, they are particularly numerous. Extensive forests are their favourite resorts, and there they may be seen flying about during the entire day in search of food.

THE EUROPEAN SPARROW OWL.

The EUROPEAN SPARROW OWL (*Microptynx passerina*) is the species we have selected as a type of the above group. Its length does not exceed six inches and a half, and its breadth fifteen and a half; the female is about an inch longer and one inch and a half broader than her mate. The body of this bird is slender, its head small, the beak powerful, and much curved and incised upon the margin of the upper mandible. The wing, in which the third and fourth quills are the longest, is short, the tail of moderate size, the foot short and thickly feathered, the facial disc is but slightly developed. The upper part of the body is mouse grey, spotted with white, the belly white, marked longitudinally with brown, the face of a mottled greyish white, the beak greyish, and the eye bright yellow; the tail is adorned with four, and the wing with several white lines. The female is of a darker hue than her mate, and has two dark lines under the eyes; brown predominates in the coloration of the young.

Although very numerous in the northern parts of Europe, and by no means rare in the central portion, this species is constantly overlooked, by reason of the smallness of its size, and because as it flies by day, and has a cry unlike that of most of its family, ordinary observers do not recognise it to be what it is—a Dwarf Owl; its habits, therefore, have been but little remarked, and it is seldom met with either in ornithological collections or in aviaries. Those few writers who have been at the trouble of making themselves acquainted with this most interesting bird, describe it as being agile, cunning, and active as a Parrot, as it hops about among the branches of trees in pursuit of the insects upon which it mainly subsists; it also consumes mice and small birds, plucking the latter carefully before devouring them. It is not uncommon to see this lively little Owl hopping about the Scandinavian villages when the snow lies heavy upon its haunts in the forest. It is easily summoned from the trees by those who can imitate its simple call-note, and may often by this means be led to a considerable distance. When perched its body appears to be far more slender in proportion to its size than that of other species, and Naumann describes its small broad face as looking more like that of an ape, than presenting the cat-like appearance with which we are all familiar in the generality of Owls. Its flight is rapid and undulating. The eggs are deposited in holes of trees, from the inmost recesses of which the voices of the parents may sometimes be heard as they summon each other. The hole is usually lined with a bed of moss and dry leaves, and upon this the eggs are deposited; these have a thick, smooth, white shell, are oval in shape, and about an inch long.

The EARED OWLS or UHUS (*Bubones*) constitute a group distinguished by a tuft of feathers growing behind each ear, and presenting the appearance of a pair of horns. The size of these birds varies considerably, some being very large while others are comparatively diminutive. In all the head is bulky, the wings blunt, the tail short and nearly straight at its extremity, the feet of moderate size and covered with feathers. The plumage, which is thick and lax, is composed of broad feathers. The beak is thick and slightly curved, the claws very long and much hooked; the eye is large, flat, and of a bright yellow; the tufts behind the ears of no great size, and the feathers upon the face only slightly developed. Several species of Uhu are found



THE UHU AT BAY.

in Southern Africa, but the northern portions of our globe must be regarded as their actual home, from whence they wander forth occasionally to other regions, but live and breed for the most part in their native lands. All are *nocturnal* Birds of Prey, and pass the entire day in such localities as afford them shelter from the sun, whose rays they studiously avoid, though they see with ease in the daylight. The larger species of Uhus live alone or in pairs, but the smaller are constantly met with in considerable flocks, except during the breeding season. These birds exhibit an extra-



THE UHU (*Bubo maximus*).

ordinary degree of good fellowship towards their congeners, and many touching stories have been told of their kindly behaviour towards each other; they are, however, inferior to the Diurnal Owls as regards their activity and intelligence.

THE UHU.

The UHU (*Bubo maximus*), King of the Night, as it has been aptly called, is the largest species of Owl with which we are acquainted; its length often exceeding two feet, and its breadth five feet; its wing measures sixteen, and its tail ten inches. The rich soft plumage of this bird is of a dark rust red, streaked with black upon the upper parts of the body, and on the under

side reddish yellow, longitudinally striped with black; the tufts behind the ears are black marked with yellow, the throat is nearly white, and the wing and tail feathers streaked alternately with brown and yellow; the beak is deep blueish grey, and the scales upon the feet of a lighter shade of the same hue; the iris is rich golden yellow, encircled by a red line. The male and female are alike in colour, but the young are yellower than the adults. Many slight variations are observable in the plumage of such as inhabit different countries. This Uhu is found occasionally throughout the whole of Europe and the northern parts of Asia, and is replaced in Africa by two other species, viz. :—The SHORT-EARED UHU (*Bubo ascalaphus*) which inhabits the north-eastern provinces, and the MILK-WHITE UHU (*Bubo Nyctaleus-lacteus*), found in the central portions of that continent; there is also a North American species, known as the VIRGINIAN UHU (*Bubo Virginianus*). So closely do these birds resemble each other that one description will suffice for them all. Their favourite haunts are mountainous districts and extensive forests, as in such situations they can lead a quiet and retired life. It is not uncommon for a pair to remain for years upon the same spot, if they are fortunate enough to escape the observation of man; still they are occasionally met with, not only living, but breeding in the vicinity of human habitations; we ourselves found a couple that had taken up their quarters and made their nest upon some fortifications near a large town. During the day they remain quietly concealed in their holes, where they are scarcely distinguishable on account of the sombre colour of their plumage, but though neither timid nor helpless in the daylight, instinct has taught them to avoid encountering the sunshine, and it is only when evening has fully set in that they sally forth to reconnoitre and seek their prey. So well do the feebler denizens of the forest know what they have to expect from this dreaded enemy, that should one of them chance to espy the Uhu as it crouches within its hole, a loud note of terror immediately conveys the appalling intelligence to its companions, whose voices at once unite in giving the huge and murderous foe a serenade that is neither harmonious nor complimentary. During the breeding season, combats between the males are of frequent occurrence, and then it is that the cry of the Uhu is heard in all the unearthly tones that have been so often supposed to proceed from demons, or some of the fanciful crowd of beings with which popular superstition has peopled the forests. Indeed, this species may be truly accused of “making night hideous,” as it flies in search of the rats and mice upon which it principally subsists. “The favourite residence of the Virginian Horned Owl,” says Wilson, “is in the dark solitudes of deep swamps, covered with a growth of gigantic timber, and here, as soon as evening draws on and mankind retire to rest, he sends forth such sounds as scarcely seem to belong to this world. Along the mountainous shores of the Ohio, and amidst the deep forests of Indiana, alone, and reposing in the woods, this ghostly watchman has frequently warned me of the approach of danger, and amused me with his singular exclamations. Sometimes sweeping down and around my fire, uttering a loud and sudden ‘Waugh, O! Waugh, O!’ sufficient to have alarmed a whole garrison. He has also other nocturnal solos, one of which very strikingly resembles the half-suppressed screams of a person suffocating or throttled.”

Richardson gives the following instance of the terror this Uhu so frequently excites :—“A party of Scotch Highlanders, in the service of the Hudson's Bay Company, happened in a winter journey to encamp after nightfall in a dense clump of trees, whose dark and lofty stems, the growth of centuries, gave a solemnity to the scene that strongly tended to excite the superstitious feelings of the Highlanders. The effect was heightened by the discovery of a tomb which, with the natural taste often exhibited by Indians, had been placed in this secluded spot. Our travellers, having finished their supper, were trimming their fire preparatory to rest, when the slow and dismal notes of the Horned Owl fell on the ear with a startling nearness. None of them being acquainted with the sound, all thought that so unearthly a voice must be the moaning of the spirit of the departed, whose

repose they imagined they had disturbed by inadvertently making a fire of the wood of which his tomb had been constructed. They passed a tedious night of fear, and with the first dawn of day hastily left the ill-omened spot."

The Uhu devours Geese, Partridges, Buzzards, and many other birds and quadrupeds in large numbers; some writers have gone so far as to accuse it of seizing upon young stags, calves, and even Eagles, but such assertions are very improbable, though the statement that it will attack hedgehogs has been fully substantiated; the prickly ball being forced to unroll by means of powerful strokes with the beak, which completes its destruction before the victim has time to coil itself up again. The period of incubation usually commences about March, and, strange to say, no sooner are the quarrels about the possession of a mate over than the cruel, violent male is suddenly transformed into the most faithful and tender of spouses, and exhibits such affection and devotion to his family as is seldom met with. Building, however, is not an art in which the Uhu excels; the eggs are therefore, if possible, deposited in the deserted nest of a Buzzard, Raven, or Black Stork, and should one of these not be found, the parent is content to drag together a few twigs and branches, and make therewith a bed in the cavity it has selected for a breeding-place. Occasionally, the comfort of this slight arrangement is dispensed with, and the two or three eggs are deposited upon the bare ground at the bottom of the hole. The female alone broods, but is meanwhile most carefully tended by her mate; and both parents assist in defending their domicile from intrusion, attacking with fierce courage not only beasts of prey, but men. Should the nest appear to have been disturbed, the mother has been known to carry off her charge to a safer retreat. Count Wodzicki mentions an instance that came under his own notice in which a young Uhu was fed at first by its parents, and afterwards, as soon as they were fledged, by its brother nestlings, for the space of two months after it had been made prisoner and fastened to a perch outside the forester's lodge. This Uhu will live for many years in confinement, but seldom become, really tame; the African species is perhaps an exception to this rule, for we saw one of these birds in Stockholm that not only allowed itself to be stroked or playfully seized by the beak, but would come to its master when called by name. "When wounded," Audubon informs us, "the Uhu exhibits a revengeful tenacity of spirit, scarcely surpassed by the boldest of the Eagle tribe; disdaining to scramble away, it faces its enemy with undaunted courage; protruding its powerful talons, and snapping its beak, it will defend itself to the uttermost against both man and dog."

The Malay peninsula and India proper are inhabited by a group of Owls, in many respects resembling the species above described, but with this difference, that they subsist principally upon fish, crabs, and other inhabitants of the water. All these birds are large, and have well-developed tufts around the ears; the beak is powerful and of moderate size, while the upper mandible is compressed, and terminates in a hook; the feet are long, and the toes bare. The plumage is not thick, the ears are small, and the wings, in which the fourth quill is longer than the rest, do not extend as far as the tip of the tail.

THE BROWN FISH OWL.

The BROWN FISH OWL (*Ketupa Ceylonensis*), called by the Cingalese "Utum," is from twenty-one to twenty-three inches in breadth, the tail measures eight, and the wing sixteen inches. The upper part of the body is of a deep reddish tinge, the feathers upon the head and nape being streaked with dark brown, while those upon the back and upper wing-covers are marked with brown and reddish yellow. The quills are reddish or yellowish brown, spotted with white upon the inner web; the tail is brown, tipped and streaked with a paler shade, the face is brown, and its bristle-like feathers

ornamented with white and black ; the chin and breast are white, partially striped with brown. The rest of the plumage is reddish brown, streaked with numerous dark lines. The eye is bright yellow, the eyelids purplish brown, the foot and beak pale greyish yellow.

The Fish Owl is found extensively throughout the whole of India and Ceylon, and is also met with in Burmah and China. In the Malay peninsula it is replaced by a very similar species. Bernstein tells us that the Fish Owl frequents woodland districts, and that, though it often lives in the



THE VIRGINIAN UHU (*Bubo Virginianus*).

immediate neighbourhood of villages, never actually takes shelter about the houses. Jerdon informs us that he usually saw it perching close to lakes, ponds, or rivers, watching for the fish upon which it mainly subsists. It also devours lizards and snakes, as well as rats and mice. Like most of its family this bird remains concealed during the day, and only issues forth at night to obtain its prey: this diurnal seclusion does not, however, arise from the fact that it cannot bear the light, for experiments have proved that it sees any object readily, even when exposed to the full glare of the sun. The voice of the Fish Owl is constantly heard throughout moonlight nights, and may be represented by the syllables Hu, hu, hu, hi." A nest found by Bernstein was nothing more than a depression



THE SCREECH OWL. — *Screech Owl.*
Screech Owl.

in some moss and lichens that had overgrown the trunk of an old tree ; it contained but one round, smooth-shelled, white egg.

THE WOODLAND OWL.

The WOODLAND OWL (*Otus sylvestris*) in many respects resembles the Uhu, from which it is distinguished by the slenderness of its shape, its long wings, in which the second quill exceeds the rest in length, its short feet, and a large tuft behind each very highly developed ear. The whole body is of a dull reddish yellow, spotted and marked with greyish brown above, and with dark brown beneath. The ear is whitish within, and black on its exterior ; the face is greyish yellow. The length of this bird is from thirteen to fourteen inches, its breadth from thirty-five to thirty-eight inches.



THE MARSH OWL (*Otus brachyotus*).

The Woodland Owl abounds throughout Europe and Asia, and is particularly numerous in the central portions of both continents. In North America it is replaced by a very similar species, which, until recently, was supposed to be identical with that inhabiting the Eastern hemisphere. These birds, as their name indicates, dwell in and around woods and forests, in the recesses of which they remain during the day, only flying by night in quest of food. In their habits they resemble the Uhu, but are less cruel and violent in their disposition. During the breeding season they live in pairs, after that period they assemble in flocks, and sweep together over the face of the country, but never actually migrate. So fearless is this bird, that should a man approach, it not only remains quietly upon its perch, but in some instances will not stir until shaken from the branches. Shrew mice, field mice, and small birds constitute its principal food, and we must therefore pronounce it to be a benefactor both to the gardener and the farmer. The Woodland Owl rarely constructs its own nest, but takes

possession of one that has been deserted by some Crow or squirrel. The four white eggs that constitute its brood are laid about March. The female continues sitting for three weeks, and is, meanwhile, fed and carefully tended by her mate, who remains almost constantly by her side, and expresses his affection by frequently uttering loud cries, and occasionally beating the air violently with his wings. The nestlings require an unusual amount of food, for which they clamour incessantly; if taken before they are fledged they may be readily tamed.

THE MARSH OWL.

The MARSH OWL (*Otus brachyotus*) is closely allied to the bird above described, and is found in all parts of the globe, with the exception of New Holland. The head of this species is smaller than that of the Woodland Owl, and its long wings reach far beyond the tail. The tufts above the ears are composed of from two to four feathers, and the plumage is principally of a bright but pale yellow; the feathers upon the head and lower parts of the body have black shafts, whilst those of the wing-covers are yellow upon the outer and black upon the inner web; they are likewise tipped with black. The quills of the tail are striped with greyish brown. The radiating feathers upon the face are whitish grey, and the eyes light yellow. The young are somewhat darker than their parents. The length of this bird is from fourteen to sixteen inches, and its breadth from forty to forty-two inches.

The peculiar characteristics of the Marsh Owls are their preference for fens and bogs, and their practice of wandering from one place to another; they frequent all the northern parts of the globe, and are by no means rare in any of the countries in which they are seen; in the more southern latitudes they appear about October, and leave again in the month of March. At night they fly softly and slowly in search of mice, lemmings, and insects, upon which they chiefly subsist; and usually pass the day amidst the grass and reeds that overspread their favourite haunts; if disturbed they crouch to the ground, and allow the enemy to approach quite close, then, rising suddenly, they hover in the air, or soar to a very considerable height. Their voice is gentle, and their anger expressed by snapping violently with the beak. The nest is extremely simple in its construction, and invariably placed upon the ground. The female lays three or four white eggs about May.

The DWARF EARED OWLS (*Scops*) are recognisable by their large heads, long wings, in which the second quill exceeds the rest in length, short slightly-rounded tail, high sparsely-feathered tarsi, and bare toes. The beak is powerful and much curved, the plumage smooth and variegated, the ear-tufts short, and the feathers that surround the aperture of the ear but slightly developed. The members of this group inhabit Southern Europe, Asia, Africa, and America. From these we shall select the European species as a type of the rest.

THE DWARF EARED OWL.

The DWARF EARED OWL (*Ephialtes Scops*) is from six to seven inches long, and from eighteen to nineteen broad; the wing measures five inches and two-thirds, and the tail about two and a half. The plumage is very striking; the upper part of the body is reddish brown, shaded with grey, and streaked and spotted with black; upon the wings the spots are white, the region of the shoulder is dashed with red; the under side is a mixture of brownish red and greyish white. The beak and feet are blueish grey, and the eyes light brimstone yellow. The sexes closely resemble each other in plumage, but that of the young is more sombre and less variegated.

The Dwarf Eared Owls are numerous in Southern Europe, and at certain seasons are met with in its more central portions, where they arrive early in the year, and leave again for warmer latitudes about September. Their migrations are performed in large flocks, and often extend as far as the

interior of Africa. They generally resort to fields, vineyards, and gardens, exhibit no fear of man, and may frequently be seen perching upon the trees that grow near crowded thoroughfares. During the day they conceal themselves under the vines, or amongst the branches of trees, the stems of which they so much resemble in colour as to be in but little danger of detection so long as they remain quiet. It is not until evening has fully set in that they sally out in quest of food, and hover, with something of the movement of a Falcon, close to the surface of the ground, in quest of mice and similar fare. The nest is built in a hollow tree, and the eggs, three or four in number, are laid in the autumn.

The NOCTURNAL OWLS are distinguished from those above described, by their large round heads, broad discs of feathers upon the face, and wide apertures to the ears, which are unprovided with tufts. The wing is usually rounded, and the tail and foot vary considerably both as to size and form. The plumage is either very thick, or lies close and compact. All the members of this group sleep or doze away the whole day, and only sally forth when the sun's last rays have disappeared, for in its light they are perfectly helpless and almost blind.

THE TREE OWL.

The TREE OWL (*Syrnium aluco*) is recognisable by its large head and comparatively small ear-apertures, as well as by its thick neck, slender body, short tail, thickly-feathered feet, and short toes. Deep grey or reddish brown predominates in the coloration of the plumage; the back being, as is usually the case, darker than the under parts of the body; the wings are regularly marked with light spots; the nape, region of the ear, face, beak, and tips of the toes are grey; the eye dark brown, and the skin that surrounds it of a flesh-colour.

This species is frequently met with throughout the whole of Europe, if we except its extreme north and south—it is but rarely seen in Spain, and never, we believe, in some parts of Russia. Woodland districts are its usual haunts, but it also occasionally seeks shelter among ruins, or even in nooks of houses. During the summer it passes the day perched close to the trunk of some old hollow tree, in the interior of which it hides itself during the winter.

The movements of this species are extremely slow and heavy, and it rarely rises above a few feet from the ground whilst seeking for the mice upon which it subsists. It also devours noxious insects of various kinds in considerable quantities, and thus renders important service both to the gardener and farmer. Martin mentions his having found no fewer than seventy-five large caterpillars in the stomach of a Tree Owl that he had killed immediately after it had finished this very substantial repast. In disposition it is dull, and more uninteresting than almost any other bird with which we are acquainted. Its cry is a loud, resonant “Hu, hu, hu,” and often rings through the darkness like a burst of demoniacal laughter. The breeding season commences about April or May, and during that period these, at other times apathetic sluggards, seem roused to something like animation, and make the woods re-echo with their discordant note. The eggs, two or three in number, are laid in cavities of trees, or sometimes in roofs or chimneys, upon a slight bed of hair, wool, or moss; the deserted nest of some other bird is also frequently employed for the reception of the young family. The eggs are oval, rough-shelled, and white. The female alone broods, and is meanwhile fed with great tenderness by her mate. Both parents are much attached to their offspring. These birds may be readily tamed, and soon become accustomed to those that feed them. Gadamer tells us that a Tree Owl in his possession used to come out every evening and stand before the open stove, stretching out its neck with every demonstration of keen enjoyment.

THE HAIRY-FOOTED OWL.

The HAIRY-FOOTED OWL (*Nyctale dasypus*) is distinguished by its unusually broad head, large ear-apertures, and well-developed facial discs; the wings are rounded, the tail of moderate size, and the short and rounded tarsi, covered with long, thickly-set feathers; the plumage is soft and silky. The upper parts of the body are mouse grey, with large white spots; and the under side white, distinctly streaked with greyish brown. The wings and tail-feathers are mouse grey, with irregular

THE TREE OWL (*Syrnium aluco*).

white stripes; the long feathers about the face whitish grey, mottled with black; the beak is greyish yellow, and the eye bright gold colour. The young are of an uniform reddish brown, with white spots upon the wings and tail. The length of this species is from nine to ten, its breadth from twenty-one to twenty-three inches, and the tail about six or seven inches.

These birds inhabit Central Europe, and are likewise found in the northern parts of Asia and America; they are never seen in any large numbers, and are reckoned among the greatest rarities in our aviaries, owing to the difficulties attendant on their capture, for their retreats are usually in the deepest recesses of woods and forests, which they seldom quit. A hollow tree is the favourite resort of a pair of Hairy-footed Owls, and there they remain during the whole day, but at night fly away together in search of food. They appear carefully to avoid the light of the sun, and are extremely

timorous. Should they be molested by the sportsman, they at once lie down close behind the branch in which they are perched, and thus effectually put themselves out of both sight and gunshot. Their voice somewhat resembles the syllables "Wi, wi, wi," and is not unlike the whimper of a child; this cry is heard principally in the evening and at early morning. The eggs, three or four in number, are deposited about April or May in a hollow tree, and are similar to those of the Stone Owl. Mice, insects, small birds, and bats constitute their principal food; the latter, according to our own observations, are caught on the wing. As in the case of the Uhu, all the small birds seem to



THE BARN OWL (*Strix flammea*).

delight in mobbing and harrying this dreaded foe, whenever they discover it sitting in the day-time perched and perfectly helpless. The young are destroyed in great numbers by the larger species of Owls and other enemies. A Hairy-footed Owl kept in Dr. Brehm's house soon became extremely tame, and though at first it invariably took refuge in the darkest corner of its dark cage, it soon lost this habit, and hopped about even during the day; it took its food from the hand of its master, and carried it to a quiet nook to be devoured, concealing the prize with its feathers whilst it ate. It seldom drank, but bathed almost daily when the weather was warm; if cold, it crouched upon the ground, drawing up its feet under its body. Its voice sounded occasionally somewhat like the low bark of a dog.

The VEILED OWLS (*Strix*) constitute one of the most remarkable groups of this very important family. Their body is slender, the neck long, the head large and broad, the wings of great size, and the tail of medium length, the legs are high, the plumage silky and very varied in its coloration. The beak is elongate, straight at the base, hooked at its tip, and the under mandible slightly indented. The eye is small and more arched than that of other species; the ear appears unusually large, owing to the long feathers by which it is encircled, and which form a heart-shaped frill around the face, the tarsi are but slightly plumed, and are covered upon the lower portion with fine bristles; the toes are almost bare, the claws long, thin, and pointed.

The Veiled Owls are found in all parts of the world, dwelling in populous districts, in and around villages, and when these are not to be found, seeking shelter in hollow trees; they especially delight in old ruins, and are constantly met with in church steeples, ancient castles, and dismantled towers, as such buildings afford them safe hiding-places until the evening closes in. All the members of this group so closely resemble each other that they might readily be mistaken for one and the same species, and all are equally remarkable for the beauty of their plumage.

KIRCHHOFF'S VEILED OWL.

KIRCHHOFF'S VEILED OWL (*Strix Kirchhoffi*), discovered by Dr. Brehm whilst in Spain, and called after one of his friends, is so extremely beautiful as to render an adequate description almost impossible. The upper portion of its plumage is of a pretty reddish yellow, mottled with grey upon the shoulders and middle of the back, and delicately spotted with black and white; the under parts are of dazzling whiteness, and as glossy as the softest satin. The discs of feathers upon the face are spotted and edged with reddish brown.

THE BARN OWL.

The FLAME OWL, or BARN OWL (*Strix flammea*), is from twelve to fourteen inches long, and from thirty-six to thirty-nine inches broad; the wing measures about eleven, and the tail from four and a half to five inches. The upper part of the plumage is dark grey; the nape and back of the head reddish yellow, delicately marked with tiny black and white streaks; the under side deep reddish yellow, spotted with brown and white; the long feathers upon the face are either entirely of uniform reddish white, or become gradually lighter towards the tip; the quills are rust red upon the inner and whitish upon the outer web, spotted and striped three or four times with dark brown; the reddish yellow tail-feathers are striped with black, and have a broad dark grey patch, mottled with white at the extremity; the beak and cere are reddish white; the bare portions of the foot blueish grey, and the eye dark brown. The female is of a somewhat duskier hue than her mate.

Old ruins of every description are constantly frequented by these birds, such lofty mountain ranges as are barren of trees they carefully avoid, but in every other situation are more or less frequently met with. The Barn Owls are stationary in their habits, and often remain for years in the same locality, spending the day in some retired nook, and sallying forth at night in quest of prey. Their sleep is extremely light, and, if disturbed, their contortions are amusing to behold, as they rock themselves from side to side upon their legs, and peer blindly at the intruder, expressing their uneasiness by a variety of the most extraordinary grimaces which we can conceive even an Owl's face to be capable of. If very hard pressed they seek safety in flight, and thus prove that they are not so completely blinded by the light as is popularly supposed. When evening sets in their active life commences, and they may then be constantly seen and heard, sweeping slowly about, and uttering their dismal cry at short intervals, as they flit over the ground, or settle for a short time upon the house-tops. Rats, mice, moles, and small birds, as well as the larger kinds

of insects, constitute their principal food. They have frequently been accused of attacking Pigeons, but this we believe is not the case.

So adroit and rapid are the manœuvres of these Owls when hungry, that their victims have but small chance of escape, and we would therefore warn such of our readers as are tempted to try the effect of domestication upon them to keep a very sharp watch indeed upon any other feathered pets that may be in the same house. A friend of Dr. Brehm's, after endeavouring to tame one of these birds for about a week, ventured on the strength of its good training to leave it for one single minute in his dark room, while he hurried away to obtain a light; when, lo, upon his return he beheld the Owl behind a stove, quietly finishing the remains of his pet Linnet, which it had seized, killed, and more than half devoured in that short space of time! This same Owl would often eat as many as fifteen mice during the day. In Spain a strange idea is very prevalent respecting this species, it being supposed to enter the churches and consume the olive oil employed in the lamps by which those buildings are lighted. For our own part we believe that such a charge is quite unfounded, and that the Owl in this case is no more guilty of the offence, than the terrible cat facetiously described as working so much havoc in English kitchens. The Spaniards make use of the body of this bird extensively in medicine, after it has been soaked in oil. According to Pennant "the Monguls of Tartary pay the Barn Owls almost divine honours, because they attribute to one of them the preservation of Ghenghis Khan, the founder of their empire. That prince, with his small army, happened to be surprised and put to flight by his enemies; when forced to conceal himself in a little coppice, an Owl settled on the bush under which he was hid, and induced his pursuers not to search there, as they thought it impossible that any man could be concealed in a place where that bird would perch."

It was formerly supposed that the Barn Owls laid their eggs about April, but recent observations have proved this statement to be incorrect. The breeding season really commences in the autumn, and during this period the happy pair testify their love and devotion to each other by loud and constant cries, as they fly sportively together around and over the towers and turrets near which they have taken up their abode—nest there is none, the young family being reared at the bottom of a hole, or in some retired corner. The nestlings are reared upon mice, and are most carefully tended by their parents, who nurse their progeny so devotedly that they have frequently been known to carry food to them for weeks or even months, after they have been captured and shut up in a cage.



THE GAPERS (*Hiantes*).

THE order to which we have given the name of GAPERS (*Hiantes*) includes a considerable number of families, which, though differing considerably from each other in some trifling respects, are related in many essential particulars. Nearly all these birds are of small or moderate size, and are recognisable by their slender though powerful body, short neck, large and remarkably flat head, long narrow-pointed wings, and short feeble legs. Their beak is short, broad, and flat, tapering towards its extremity, and although somewhat varied in its formation, is always surrounded by a stiff, bristle-like growth; the gape is so unusually wide as to constitute the most remarkable feature they all have in common. The plumage is sometimes harsh and dusky, and sometimes soft, glossy, and brilliantly coloured. The birds belonging to this order principally frequent the warmest portions of our globe, and are rarely met with in high northern latitudes, as the latter afford them but a very scanty supply of the insects upon which they mainly subsist. Heat is essential to the abundance of their favourite food, and it is for this reason that such species as inhabit the temperate zones are compelled to quit their native lands for sunnier climes as winter approaches. Some occupy forests; others mountains, valleys, or open plains; and many, when about to make their nests, seek the immediate vicinity of man. All the members of this order are possessed of extraordinary powers of flight, and pass the greater part of their lives in pursuing their tiny prey through the realms of air. Upon the ground they move awkwardly and slowly, and are usually scarcely more adroit in climbing among the branches of trees. The sight of all these birds is excellent, but their other senses appear to be only slightly developed. In temper they are social, brisk, and restless, and exhibit much tenderness towards their young. Their intelligence, however, is by no means great; indeed, some species are unquestionably extremely deficient in this respect. So very various is the formation of the nests, and the number and appearance of the eggs of the different families into which this order is divisible, that we shall not attempt to mention them here, but will describe them with the group or species to which they belong.

SWALLOWS.

THE SWALLOWS (*Hirundines*) constitute the foremost family of this order, and are readily distinguished by their small, delicately-formed body, broad breast, short neck, and flat head; their beak is short, flat, broad at its base, and terminates in a slight hook; the gape is so wide as to extend as far as the eyes. These birds have no crop; their broad, flat, horny tongue is sharp at its edge, divided at its tip, and furnished with small tooth-like appendages towards its base. The feet are broad and feeble, the toes, three of which are placed in front, are very weak and the claws are slender. The wing is long, narrow, composed of nine quills, and sharply-pointed at its extremity; the tail forked, containing twelve feathers; those at the exterior often far exceeding the centre ones in length. The plumage is composed of small compact feathers, and frequently exhibits considerable metallic lustre. Both sexes are alike in colour, but the young differ somewhat from the adult birds.

Swallows are found throughout every division of both hemispheres, and occupying every latitude, but they rarely breed and are far from numerous within the limits of the Polar regions. Such





RED-BACKED SHRIKE

Lanius ludovicianus excubitorides

species as inhabit the torrid zones do not migrate, whilst those that visit comparatively cold countries go to warmer climes as winter approaches, quitting and returning to their native lands at the appointed period with such extraordinary regularity that the time of their appearance or departure may be calculated almost to a day. As regards their intelligence, these birds are far superior to most other members of the order. Their pleasing twitter may almost be termed a song, and their flight is distinguishable by an ease and rapidity that has rendered it proverbial. All Swallows bathe and drink whilst upon the wing. They subsist upon insect diet, which they obtain by darting upon their tiny victims with marvellous velocity as they skim through the air, and swallow them entire. They consume beetles and flies in enormous quantities, for their appetite is insatiable ;



THE CHIMNEY SWALLOW (*Cecropis-Hirundo-rustica*).

but bees and wasps, or any insect armed with a sting, they never touch, as their wonderful instinct renders them fully aware that such morsels are not to be snapped at with impunity. Naumann mentions that having upon one occasion put a wasp into the beak of a young Swallow, the bird died almost immediately from the effects of the stinging it received whilst swallowing the insect. Some species form most artistic abodes with bits of clay consolidated by means of the glutinous spittle with which the members of this family are provided ; whilst others excavate deep holes for the reception of the young, the same nests being employed for many successive years. The females alone brood, and lay from two to six eggs.

The TRUE SWALLOWS (*Cecropis*) are characterised by their slender and powerful body, wide flat head, broad but very slightly curved beak, long wings, extending beyond the deeply-forked tail,

moderate sized foot, and lax plumage, which upon the upper parts gleams more or less with metallic lustre.

THE CHIMNEY SWALLOW.

The CHIMNEY SWALLOW (*Cecropis-Hirundo-rustica*) is seven inches long and twelve broad, the wing measures four and a half and the tail about three inches. The upper part of the plumage is glossy blueish black; the brow and throat are chestnut brown, a broad line upon the head black, and the other parts of the body reddish yellow. The five outer feathers of the tail are adorned with round white spots upon the inner web. The female is not quite so dark as her mate, and the young are still paler. This species breeds throughout the whole continent of Europe, if we except its extreme north. In the northern parts of Asia and Africa it is replaced by a very similar species—the RUST-RED SWALLOW (*Cecropis cahirica*, or *Cecropis Boissoneauti*), which is very numerous in Egypt. The NORTH AMERICAN HOUSE SWALLOW (*Cecropis Americana*), the SOUTH AMERICAN RED SWALLOW (*Cecropis rufa*), and the *Cecropis neoxena* are also very nearly allied species, but somewhat less in size than their European relative.

We are desirous our readers should fully understand that the Chimney Swallow is essentially a native of Europe, and that when it wanders to warmer regions it does not “homeward fly,” but exactly the contrary, being then compelled, by reason of the approach of winter, to leave its native land “in distant climes to roam,” until such time as the breath of spring has caused the snow and frost completely to disappear, and the leaves have again burst forth upon the trees. When these migrations are about to commence, the Swallows assemble in very large flocks, which congregate upon the trees or houses, and keep up such an incessant twitter and commotion as would lead an observer to suppose that they are discussing the important journey they are about to undertake. The Swallows usually leave Europe about September or October; according to our own observation, they often travel as far south as eleven degrees north latitude, and are constant winter guests in India and Ceylon; by the end of April, however, they are with us again, and have either sought out their old nests or chosen a proper spot on which to build. For this purpose, they generally select such districts as are in the vicinity of water; and, “although the Chimney Swallow has received its most general name from the somewhat peculiar position in which it frequently builds its nest, it by no means confines itself to chimneys, but builds readily in almost any suitably-sheltered position. Thus, the disused shafts of mines and the sides of old wells are sometimes resorted to. Occasionally it will build in the roof of a barn or shed, attaching its nest to the rafters; or in a garret or passage to which it finds easy access. In almost all cases it selects a point where some projection from the wall, ‘some coign of vantage ground,’ forms a buttress on which its nest may be supported. The nest is constructed principally of mud or soft earth, collected in small pellets from the edges of ponds and other wet places; these are carried home in the bird’s bill, and plastered on to the spot selected for the nest; fresh pellets are then brought and added, together with numerous straws and leaves of grasses, until the whole is gradually moulded into the form of an open saucer, attached by one side to the wall of the chimney or other place of retreat. A lining of feathers is then put into the nest, and upon these the eggs are laid.” Such of these nests as are well sheltered from the wind and rain are often employed for many years, and that, not merely by the original builders, but by successive generations; any little repairs required being made from time to time by the occupants.

The Chimney Swallow, though by no means a powerful or hardy bird, possesses such an amount of life and spirit as is seldom met with in any other members of the feathered race, and which no inclemencies of weather or scarcity of food can entirely quell. Its appearance is extremely trim, and its disposition so brisk and lively that it has ever been an especial favourite. Morning has scarcely

dawned before it is on the alert, and occupied in twittering its summons to the rest of the world to be up and about their work. Its voice can boast no real music, but its notes are so sprightly, and so evidently the outpouring of the bird's own joyous sensations, as it turns its breast in all directions, flaps its wings, and indulges in a variety of animated gestures, that it cannot fail to please the hearer, and impart an additional charm to the beauties of the first hours of a bright early summer's day.

The flight of this species is peculiarly light and graceful, and very far superior to its movements upon the ground, over which it crawls with an awkward and helpless step, its little feet appearing quite unable to support its body, either when walking or perching. When upon the wing the powers of the Swallow are seen in their full perfection, and few objects are more beautiful than one of these birds, as it skims over the face of the country, now soaring upwards to a great height, and now sinking suddenly down until it almost sweeps the ground; then changing its course, it flies backwards and forwards with amazing celerity, pursuing its way with untiring speed, and not unfrequently indulging in a bathe in the lake or stream over the bosom of which it delights to skim. This proceeding, like all its other evolutions on the wing, is rapidly and easily accomplished; the bird sinks close to the water, and suddenly darts beneath its surface, reappearing in less than a moment, and then flies off to a distance to shake the moisture from its plumage. The Swallow devours enormous numbers of flies, beetles, and butterflies; when in pursuit of prey it either keeps near the ground, or skims through the air at an altitude regulated according to the barometrical state of the atmosphere, insomuch that from this fact has arisen the popular idea that its movements indicate the kind of weather to be expected.

The eggs (see Fig. 35, Coloured Plate X.), from four to six in number, are laid about May, and are incubated entirely by the female. If the season is fine the male ministers to her wants, and the young are hatched in twelve days; but should the weather be cold or wet the unfortunate mother is expected to provide for herself, and must therefore leave her nest; if this is the case the nestlings do not quit the shell for about seventeen days. The young grow rapidly, and before they are fully fledged may be often seen peering and gaping above the sides of the nest, until able to accompany their parents during their daily excursions; yet, even then, they return to the nest for a short period as evening closes in. No sooner has the first family become self-supporting than the female again lays, but this time the eggs are fewer than before, and it is not uncommon for this second brood to be hatched so late in the season that the nestlings are too weak to accompany the rest of the family when the time for migrating arrives. A Spanish proverb says, "He who could destroy a Swallow could kill his own mother;" but, in spite of the reprobation of the act expressed in this popular adage, hundreds and thousands of these useful and sprightly birds are annually slaughtered out of mere wanton mischief, not only in that country, but in all parts of Europe, and yet few members of the feathered creation are more innocent, more useful, or more ornamental to the landscape. "The Swallow," says Sir Humphry Davy, "is one of my favourite birds, and a rival of the Nightingale, for he cheers my sense of seeing as much as the other does my sense of hearing. He is the glad prophet of the year, the harbinger of the best season; he lives a life of enjoyment, among the loveliest forms of Nature. Winter is unknown to him, and he leaves the green meadows of England in autumn, for the myrtle and orange groves of Italy, and for the palms of Africa. He has always objects of pursuit, and his success is secure. Even the beings selected for his prey are poetical, beautiful, and transient. The ephemeræ are saved by his means from a slow and lingering death in the evening, and killed in a moment when they have known nothing but pleasure. He is the constant destroyer of insects, the friend of man, and a sacred bird. His instinct, which gives him his appointed season, and teaches him when and where to move, may be regarded as flowing from a Divine source; and he belongs to the oracles of Nature, which speak the awful and intelligible fiats of a present Deity."

The power of flight possessed by these birds is truly wonderful, and the distance to which they can travel through the air, without the possibility of rest, is almost incredible. Nevertheless, at one time, and that not many years ago, it was believed that on the approach of cold weather Swallows plunged to the bottom of some pond, in the mud of which they passed the winter, and revived again in spring. So long ago as the year 1849 this subject was brought before the Academy of Sciences at Stockholm, and the following document, which, coming from the quarter it did, was by some looked upon as an irrefragable proof of the truth of this strange story, was submitted to and gravely discussed



THE THREAD-TAILED SWALLOW (*Cecropis Uromiæus-filifera*).

by that learned body :—"Near to the estate of Kafvelas, in the province of West Gothland, there is a little lake called Djpasjon, where on several occasions in the winter time, when the ice-net has been drawn, *stelnade*, or stiffened Swallows, have been brought up in my presence. My father, then Inspector at Kafvelas, who was also present, directed me to take some of them home, and place them in a chair at some little distance from the fire. This I did, and, to my great astonishment, I soon observed the birds to draw their heads from under their wings, where they had been previously placed, and in a few moments to fly about the room. But as this was not the proper season for their quickening, they lived but a short time afterwards."

So often has this statement been repeated, that even Wilson felt himself called upon to confute it. "The Swallow," says that graphic writer, "flies in his usual way, at the rate of one mile in a minute, and he is so engaged for ten hours every day; his active life is extended on an average for ten years, which gives us two million one hundred and ninety thousand miles—upwards of eighty-seven times the circumference of the globe. And yet this little winged seraph, if I may so speak, who in a few days can pass from the Arctic regions to the torrid zone, is forced when winter approaches to descend to the bottom of lakes, rivers, and mill-ponds, to bury itself in the mud with eels and snapping turtles, or to creep ingloriously into a cavern, a rat-hole, or a hollow tree, with snakes, toads, and other reptiles, till the return of spring! Is not this true, ye wise men of Europe



THE MARTIN (*Chelidon urbica*).

and America, who have published so many *credible* narratives upon this subject? The Geese, the Ducks, the Cat-bird, and even the Wren, which creeps about our houses like a mouse, are all declared to be migratory, and to pass to southern regions on the approach of winter. The Swallow alone, on whom Heaven has conferred superior powers of wing, must sink in torpidity to the bottom of some pond to pass the winter in the mud!"

We must confine our notice of the True Swallows to the mention of two other species, one remarkable for its size, and the other for the very peculiar formation of its tail.

THE SENEGAL SWALLOW.

The SENEGAL SWALLOW (*Cecropis Senegalensis*) is about eight inches long and fifteen broad; the wing measures five and a half, and the tail about four inches. The plumage of the upper part

of the body is of a glossy blueish black, with the exception of the rump and a ring round the neck, which are reddish brown; the under side is entirely of the latter hue, somewhat paler upon the throat and upper part of the breast. This very large species inhabits Central Africa in great numbers, and is met with from the western coast to the shores of the Red Sea. In its mode of life and habits it so closely resembles the Chimney Swallow that a description of its habits would be mere repetition; unlike that bird, however, it does not always dwell in the immediate vicinity of man, but frequently wanders forth and lives upon the vast and barren steppes. Another very similar species is found in Angola and at the Cape of Good Hope.

THE THREAD-TAILED SWALLOW.

THE THREAD-TAILED SWALLOW (*Cecropis-Uromitus-filifera*) is a small and delicate bird, easily recognisable by the long threads in which the two outer feathers of the tail terminate. The upper part of the body is of a beautiful metallic blue, the top of the head rust-red, the region of the cheeks black, the under side white, and the tail spotted with white. The length of this species is five, and its breadth eleven inches. The thread-like appendages are not so long in the tail of the female as in that of her mate. This singular bird principally frequents India and Central Africa, and we have met with it living solitarily or in pairs during our travels in Nubia. As far as we were able to ascertain, its habits exactly correspond with our account of its European congener. The Indians call this species "Leischra," as the threads attached to the tail are supposed to resemble the grass known by that name.

THE MARTIN.

THE MARTIN or ROOF SWALLOW (*Chelidon urbica*) we have selected as the type of a group, recognisable by their slightly forked tail and strong feet, the toes of which are connected from the first joint, and, like the tarsi, are thickly covered with feathers. This bird is five inches and a half long, and ten and three-quarters broad; the wing measures four inches, and the tail two and a half. Upon the back the plumage is almost entirely of an uniform blueish black; the under side and rump are white. The eye is dark brown, the beak black, and the bare parts of the foot black. Both sexes are alike in colour, but the plumage of the young is less clear in its tints than that of the adult. The Martin inhabits the whole of Europe, and penetrates further north than the Chimney Swallow; it is numerous in Siberia, and during its migrations visits the interior of Africa and Southern Asia. In most respects it closely resembles the species already described, but is somewhat less brisk and intelligent; its flight also is not so rapid and varied as that of the Chimney Swallow, but it frequently soars to an enormous height in pursuit of the insects upon which it subsists. Its voice is very far inferior to that of the rest of its family, and its cry monotonous and harsh.

In populous districts the nests of this bird are invariably constructed upon houses, but where human habitations are scarce, the Roof Swallow is content to make its preparations upon rocks, or any situation that will afford it a secure shelter from the wind and rain. The nest is very similar to that of the Chimney Swallow, but with this difference, that it is always built against a hole, and has no external entrance; sometimes many pairs construct their dwellings under the same eaves or the same rock, and thus form a kind of settlement. Although usually peaceful, during the breeding season disputes and battles are of constant occurrence; each couple naturally endeavouring to obtain the snuggest corner, and to oust its neighbour should the opportunity offer. The brood consists of from four to six delicate snow-white eggs, and the nestlings are hatched in about twelve days. The female alone broods, and is fed by her mate only when the weather is fine; the young also frequently have but an insufficient supply of food, owing to the difficulty of procuring insects when the season is inclement, and thus must very often be left behind when the flocks

migrate, as they are still too weak to undergo such great fatigue. If all goes well, the nestlings are fully fledged in about sixteen days, but generally remain for some time longer under the care of their parents. During this period the whole family return at night to their nest, which they fill so completely that we have often been inclined to wonder that the walls did not give way under the pressure to which they were subjected. Desperate fights often ensue when a stray bird finds its way into a wrong nest, and most courageously do those in possession exert themselves to expel the intruder, who is generally equally determined to remain. Far less brave is the Swallow when brought into collision with its principal enemy, the Sparrow; it often happens that no sooner is the Swallow's nest completed than a male Sparrow creeps in and takes possession, keeping guard at the door, in order to prevent the entrance of the rightful owner; under these circumstances, the latter, not venturing to obtain admittance by force, usually summons its companions, who together beset the impudent intruder with loud cries and every demonstration of anger. In most cases the Sparrow retains possession of its ill-gotten abode, but should the Swallow be bold, a battle sometimes takes place that proves fatal to one or other of the combatants. So constant are these attempts of the Sparrow to obtain a home for its young, that a pair of Swallows sometimes are deprived *twice* in the season of the domicile they have laboriously completed, and, should this occur, do not breed at all that year. It was formerly imagined that the Swallow revenged itself on its foe by building it up in the nest, but we need hardly say that this is untrue.

The Martins make their appearance in England a few days after the Chimney Swallow (*Cecropis-Hirundo-rustica*), and on their arrival are usually seen in warm and low situations, such being most likely to supply an abundance of their natural food. They are equally distributed throughout the kingdom, and are found wherever man has fixed his residence, seeming to court his protection. They commence nidification early in May, and build in the upper angles of windows and under the eaves of houses, sometimes under the arches of bridges or against the face of rocks. The nest is formed of mud completely worked and cemented, and is closed all round except a small orifice, usually on the sheltered side, just of sufficient size to permit the passage of the inhabitant; the interior is well lined with a collection of straw, hay, and feathers. These birds leave us in October; preparatory to their departure, they congregate in great numbers on the roofs of houses,

The MOUNTAIN or SHORE SWALLOWS (*Cotyle*) are recognisable by their slightly forked tail, and lax, lustreless plumage. Two species are indigenous to Europe; a description of these will serve for the entire group.

THE ROCK SWALLOW.

The ROCK SWALLOW (*Cotyle rupestris*) is about five inches and a half long, and from twelve and a half to thirteen and three-quarters broad; the wing measures about five inches. The coloration of the plumage closely resembles that of the rocks upon which this species principally lives. The upper parts of the body are light brown, the quills and tail blackish; the centre feathers that compose the latter are beautifully marked with oval yellowish white spots; the throat is whitish; the breast and belly dirty reddish grey; the eye is dark brown, the beak black, and the foot reddish grey. The sexes are nearly alike; the young are somewhat more uniform in hue than the adult bird.

The actual habitat of the Rock Swallows appears to be Spain, Italy, and Greece, but they are constantly met with and are known to breed in the Tyrol, and even in still more central parts of Europe. So hardy are they that such as migrate do not leave till the autumn is far advanced, and return as early as February or March; whilst others, inhabiting the extreme south, remain in

their native land throughout the entire year. In Egypt and South-western Asia they are replaced by a smaller but very similar species. The Rock Swallows seldom associate with their congeners, and are readily distinguished from them by their greyish hue, and comparatively slow and hovering flight. In Switzerland, after their return in the spring, they usually allow some time to elapse before they seek their own nests or build new ones; during the interval they busy themselves in making excursions in all directions, either skimming near the mountains, or, if the weather be fine, soaring to a considerable height in the air. If, on the contrary, the season be dull or rainy, they keep close to the earth, or beneath projecting rocks and stones. If the day be bright, they come down from their retreats among the mountains, and perch upon the roofs of cottages, but never venture actually into houses. The nest is placed beneath a projecting ledge of rock, or in some similar situation, and resembles that of the Chimney Swallow. Several pairs frequently build together, but we have never seen settlements like those formed by some other species. Many various statements have been made as to their mode of nidification, seeing that, owing to the precipitous nature of the localities selected, it is very often extremely difficult to approach the abode of a Rock Swallow. The eggs are white, spotted with red, and are from three to five in number. After the nestlings are fully fledged, they still remain for some time with the old birds, following them about in search of insects, which are caught on the wing, but as soon as a fly or a beetle is thus obtained, the hungry young perch for a moment upon a tree, and receive the morsel from the parent's beak. When the period of incubation is over, the different families form small parties, and wander about the country, as in the spring, until the proper time for commencing their migrations. In its general disposition, the Rock Swallow is less alert and brisk than its congeners, and its voice has a deeper and rather hoarse sound.

THE SAND MARTIN.

The SAND MARTIN (*Cotyle riparia*), one of the smallest members of its family, is only five inches long and eleven broad; the wing measures four, and the tail two inches. The plumage is greyish brown above, white beneath, and marked on the breast with a greyish brown ring. The sexes are nearly alike, but the young are darker than the adults. These birds inhabit and breed in all parts of Europe, except the extreme northern countries, and usually frequent such rocks or hills as overhang streams and rivers. The wonderful nests that have rendered the members of this group so famous, are made either in natural hollows, or in holes excavated with enormous labour by the builders; they appear, however, to prefer the cavities which they have themselves prepared, and are most careful to dig their retreats at such an elevation as to be above high-water mark. "It appears," says Naumann, "almost incredible that a pair of these small birds, with no other instruments than their delicate beaks, can dig, as they do, a horizontal passage several inches in diameter, and from three to six feet deep, in the space of two, or sometimes three days. The male and female both assist in this, for them, gigantic undertaking, and work with the utmost energy and ardour, disposing of the loose earth by throwing it out behind them with their feet; and yet, strange to say, it is not uncommon for them suddenly to leave one of these excavations when almost finished, and commence another; occasionally, they will even dig a third. Why they do this has never been satisfactorily ascertained, for it is only the passage to the chamber in which the nest is made that is ever occupied either by the parents or the young family. Many pairs invariably work close together, thus forming an extensive settlement, and it is most amusing to watch the earth flying out of a number of their holes as it is ejected by the busy labourers, who are usually quite out of sight." It is to these settlements that Pliny alludes in the following amusing terms: "At the Heracleotic mouth of the Nile in Egypt, the Swallows present an insuperable obstacle to the inroads of that river, by the embankment formed by their nests in one continuous line, nearly a

stadium in length—a thing that could not possibly have been effected by the agency of man. In Egypt, too, near the city of Coptos, there is an island sacred to Isis ; in the early days of spring, the Swallows strengthen the angular corner of this island with chaff and straw, thus fortifying it in order that the river may not sweep it away. This work they persevere in for three days and nights together, with such unremitting labour that it is a well-known fact that many of them die in consequence of their exertions ; moreover, this is a toil which recurs to them regularly every year.”

The nest itself is made at the end of the above-mentioned passage, and consists of a bed of straw, hay, and fibres, snugly lined with wool, hair, and feathers. The eggs, five or six in number, are of an oval shape, and have a thin, pure white shell. The young are hatched in a fortnight, and remain for a similar period under the care of their parents. Should the first family not be reared, a



THE ARIEL (*Chelidon Ariel*).

second brood is at once laid. The flight of the Sand Martin is so light as to bear comparison with that of the butterfly. Its voice is weak and gentle, and its disposition lively and active ; it is extremely social, and lives at peace with most other birds. In its general habits it resembles its congeners, but leaves for warmer climes earlier in the year than they do, and does not reappear till about May.

THE ARIEL SWALLOW.

The ARIEL SWALLOW, or FAIRY MARTIN (*Chelidon Ariel*), as the Australian representative of our Roof Swallow is called, is about three inches and a half in length. The upper part of its body is deep blue, the top of the head rust-red, the rump brownish white, and the tail dark brown ; the eye is blackish brown, the beak black, and the foot brownish grey. According to Gould, the Ariel appears in the southern and western portions of Australia about August, and, seeking after its old haunts, lays two or three broods, and departs again in February. In some situations the nests of this species are built crowded together under eaves of houses and hollow trees, or beneath the shelter of an

overhanging rock ; the male birds assist in the construction of the long flask-like passage by which the actual home for the young is entered, and fetch clay for the females while employed in building.

"Until my arrival in the colony of New South Wales," says Gould, "I had no idea of the existence of this new and beautiful Martin, nor, in fact, until I was awakened by its twittering notes at the bedroom window at the inn in Maitland did I discover that I was surrounded by hundreds of this species, which were breeding under the verandahs and corners of the windows, precisely after the manner of the Common Martin. Several of their bottle-shaped nests were built round the house, and from thence I obtained as many eggs as I desired. I observed this bird throughout the district of the Upper Hunter, as well as in every part of the interior, breeding in various localities, wherever suitable situations presented themselves, sometimes in the holes of low decayed trees, while not unfrequently clusters of nests were attached to the perpendicular banks of rivers, the sides of rocks, &c., always, however, in the vicinity of water. The nest, which is bottle-shaped, with a long neck, is composed of mud or clay, and, like that of our Common Martin, is only constructed in the morning and evening, unless the day be wet or lowering. While building these nests they appear to work in small companies, six or seven assisting in the formation of each, one of them remaining within and receiving the mud brought by the others in their mouths. In shape the nests are nearly round, but vary in size from four to six inches in diameter, the spouts being eight, nine, or ten inches in length ; when built on the sides of rocks or in the hollows of trees, they are placed without any regular order in clusters of thirty or forty together, some with their spouts inclining downwards, others at right angles, &c. ; they are lined with feathers and fine grasses." The eggs, which are four or five in number, are sometimes quite white, or spotted or blotched with red ; they are eleven-sixteenths of an inch long, by half an inch broad.

The WOOD SWALLOWS (*Atticora*) are delicate birds with long wings (in which the first and second quills are of equal length), forked tails, thin beaks, and slender legs, furnished with short toes ; the plumage gleams with metallic lustre, and is much varied in its hues. All the species included in this group inhabit South America and Africa ; they frequent woods and forests, and build their nests in the trunks of hollow trees.

THE STRIPED WOOD SWALLOW.

The STRIPED WOOD SWALLOW (*Atticora fasciata*) is a native of Brazil. Its plumage is black, marked with white upon the breast and under part of the thigh ; the rump has a blueish gloss. The length of the body is six inches, the wing measures four, and the tail three inches. This active, lively bird frequents the forests of Northern Brazil, from whence it flies, in search of its insect fare, over the neighbouring streams and rivers, and perches or sleeps amongst the surrounding trees.

We must not omit to mention the American SAILOR SWALLOWS (*Progne*), partly because they have frequently been seen in Europe, but more especially as they form the connecting link between the Swallows and the Swifts ; they are powerful birds, with long, broad wings, extending beyond the very decidedly forked tail. Their beak is strong, broad at the base, compressed at its sides, much arched, and terminates in a hook ; the legs are robust, the tarsi bare, and the toes thicker and more fleshy than those of other Swallows. The plumage is very dense.

THE PURPLE SWALLOW.

The PURPLE SWALLOW (*Progne purpurea*) is seven inches and a half long and fifteen and a half broad ; the wing measures about five, and the tail two and a half inches ; the centre feather

of the latter does not exceed two inches. The female is a trifle smaller and more slender than her mate. The plumage is of a deep blackish blue, shaded with purple ; the quills and tail-feathers are blackish brown ; the eye dark brown, the beak blackish brown, and the foot purplish black. The head of the female is brownish grey, spotted with black ; the upper part of the body is greyer in tint than that of the male, and streaked with black.

This bird is a particular favourite with the Americans, and has been described at great length by many writers. According to Audubon, the Purple Swallows appear in New Orleans about February, and at once come sweeping about the towns or over the streams and rivers. Near the Falls of the Ohio, they are not seen till March, and in Missouri not before the middle of April. In August they leave for more southern countries, assembling like their European brethren upon steeples or high trees, preparatory to starting upon their travels. The flight of this species resembles that of the Roof Swallow, but upon the earth and among the branches of trees its movements are far more easy, and it frequently alights to seek for insects on the ground. Whilst upon the wing, it often bathes and drinks in the same manner as our English Swallows, and like them seizes its prey as it darts through the air. Its disposition is bold and courageous, insomuch that it will frequently chase cats, dogs, Falcons, Cranes, or even Vultures, with great intrepidity.

The nest of the Purple Swallow, which is long and flask-shaped, is formed of dry twigs, grass, leaves, feathers, and other elastic materials, and is either built against a tree or placed in similar situations to those selected by its congeners. The female produces two and sometimes three broods, and lays from four to six purely white eggs ; the first family is fully fledged by May, and the second about July. Both parents assist in the work of incubation ; the male proves himself a most tender and devoted spouse, and often spends whole hours at the side of his mate, singing to her with great vivacity. Should several pairs brood near the same spot, the utmost harmony prevails among them.

Pursuant to our intention of laying a *natural* classification of the Animal Kingdom before our readers, we shall now proceed to describe the SWIFTS, although we are well aware that many modern naturalists consider that they should not be grouped with the Swallows.

The family of the SWIFTS (*Cypseli*) are small or moderate-sized birds, with a long slender body, short neck, broad flat head, and small delicate beak, which is broad at its base, slightly curved, and somewhat compressed at its tip. The gape is uncommonly wide ; the wings are narrow and curved like a sabre ; the tail is very variously formed, being sometimes long, sometimes short, and more or less deeply incised at its extremity ; the feet and toes are stunted, the latter armed with short, powerful, and much curved claws. The plumage is thick and composed of small feathers, it is usually of a dusky hue, but occasionally exhibits considerable metallic lustre. The various members of this family are found throughout all the divisions of our earth, except its most northern portions, and inhabit every situation from the sea-coast to the snow boundary of lofty mountain ranges. From early morning till late in the evening, they may be seen skimming through the air with astonishing rapidity, or soaring to such an elevation as to be almost beyond the reach of our vision. So powerful are their wings that no amount of exertion appears to fatigue them ; their pinions, which when extended form a crescent, are wielded with a force and rapidity rivalling the activity of the Humming Birds—they dart with the velocity of an arrow upon their prey, or indulge in every conceivable variety of flight or motion, as they skim through what may certainly be called their native element ; even when among the branches of trees, they display considerable agility, but are perfectly helpless upon the ground. All the members of this family are of a restless disposition ; they spend but a few hours of the night in repose, and require a very large amount of food to enable them to

support their prolonged exertions, so that they consume insects in enormous quantities, seizing them whilst upon the wing.

All such species as inhabit the temperate zone migrate with the utmost regularity as winter approaches, and return to their native haunts with such unfailing precision that the day on which they will re-appear may be accurately prognosticated. Those species inhabiting the interior of Africa never actually migrate, but occupy themselves in flying over the face of the country during



THE KLECHO (*Dendrochelidon klecho*).

the wet season. The work of constructing the nest is commenced as soon as the winter journeyings are over, and is always carried on amidst great excitement; the males chasing and fighting each other most furiously during the whole time, and constantly engaging in pitched battles with the birds whose nests they prefer taking rather than undergo the labour of constructing a home for themselves. Unlike the nests of the Swallows, those built by the Swifts seldom consist of more than a few slight materials laid carelessly together, and cemented with saliva from the builder's beak. The eggs are round and white; the female alone broods, but both parents share in the toil of satisfying their hungry progeny.



SALANGANES

The TREE SWIFTS (*Dendrochelidon*) constitute a group whose various species form a link between the Swallows and the Swifts Proper. These birds are recognisable by their elongate body, long wings, in which the two first quills are of equal length, their long, deeply-forked tail, and the crest with which their head is adorned : their feet resemble those of the Swallow.

THE KLECHO.

The KLECHO (*Dendrochelidon klecho*), so called from the sound of its cry, is about seven inches long ; the wing measures six, and the tail three inches. Upon the upper part of the body the plumage is of a brilliant metallic steel-green ; the wing-covers have a bluish lustre ; the quills are blackish on the inner and blue on the outer web, and the shoulder-feathers white. The belly is white, the rest of the under surface and rump of a beautiful deep grey. The male has a reddish brown and the female a black spot near the eye.

The Tree Swifts differ almost entirely in their mode of life from any other members of their family. Extensive woods and dense forests are their favourite resorts, such being preferred as are in lowland districts ; according to Jerdon, the Indian Klecho constantly builds in these localities, flying from thence over the streams or lakes in the vicinity in search of insects on which it subsists. Whilst resting from its labours it usually selects a withered tree for its perch, and amuses itself by expanding and playing with the beautiful crest upon its head. Its flight is excellent, but it climbs awkwardly among the branches. When upon the wing it utters almost incessantly a loud parrot-like scream ; when perched its voice is not quite so harsh. We learn from Bernstein that, unlike all other Swifts, the Klecho usually builds at the summit of a tree, upon a branch of about an inch in thickness. Its strange nest, the walls of which are scarcely thicker than parchment, is constructed of bits of bark, feathers, and other similar materials, woven together, and cemented with saliva. The great peculiarity of the nest consists in the fact that it is only just big enough to contain the one large egg laid by the female, and that the walls are far too delicate to bear the weight of the brooding mother ; the bird is, therefore, compelled to perch and support herself upon the branch, and merely allow her breast to cover and warm her offspring. The female lays twice in the season ; the egg is perfectly oval and of a blueish tint.

The SALANGANES (*Collocalia*) are a group of Swifts whose edible nests have been famous from time immemorial, but as to whose life and habits little information has been acquired. These birds are distinguished by their small size, long wings, in which the second quill exceeds the rest in length, their forked or slightly incised tail, small but powerful beak, and delicate feet, the exterior toe of which is directed backwards. In all the members of this group the salivary glands are much developed.

THE SALANGANE PROPER.

The SALANGANE PROPER (*Collocalia nidifica*), as we will call the species most extensively met with, is from four to five inches long, and twelve inches broad. Its wing measures about four inches and a half, and its tail two and a quarter. The plumage is of a greyish brown, paler upon the under surface ; the quills and tail are blackish, and the vicinity of the eyes marked with white. The feathers of the adult have a slight metallic lustre that is not perceptible in the young. It was formerly supposed that these remarkable birds were only found upon the Sunda Islands, but modern observation has proved that they also inhabit the mountains of Assam, the Neilgherries, Sikkim, and Ceylon. Most contradictory tales have been told by travellers as to the materials of which their famous edible nests are composed.

The earliest account of these nests is met with in Bontius, who tells us that "Large flocks of very small birds of the Swallow kind come down during the breeding season, and settle upon the Chinese coasts, where they swarm over the cliffs that overhang the sea. In these situations they build their strange nests, forming them of fish spawn, which they collect from the shore. These nests are much valued by the natives, who will often pay very large sums of money for them, in order to make them into soup, which is considered a dainty." More modern investigators have been equally inaccurate in their surmises, some pronouncing them to be constructed of the flesh of a kind of snail or worm, or a peculiar species of sea-weed, gathered from the shore. Recent observations upon this interesting point have, however, proved that all these explanations are incorrect, and we learn that these luxuries, in which the Chinese so much delight, are formed of a secretion resembling saliva, drawn from under the bird's own tongue. After a great variety of experiments as to its component parts, Marsden pronounces that the material resembles a mixture of gelatine and white of egg, an opinion in which Bernstein, who is a trustworthy authority on this disputed question, entirely coincides; we will, however, describe the nest of the Salangane before we give our readers the real secret of its construction, as vouched for and described by the last-mentioned naturalist. The Salangane usually builds in such deep and dark cavities that the observation of its proceedings as it fastens its small, thin, gelatinous nest to the rock, is attended with great difficulty. This structure is in shape like the quarter of an egg-shell, divided longitudinally along its entire length. Some of these nests are white, some of a brown colour, and opinion differs considerably as to the reason of this variety; we ourselves believe it to depend on the age of the structure, as we have never seen a brown nest occupied, but other authorities pronounce them to be the work of two distinct species. In the markets the white nests command a very high price, while such as are dark are but little esteemed. The two white eggs laid by the Salangane are deposited at the bottom of this remarkable gelatinous receptacle, without any further preparation for their warmth or comfort.

THE KUSAPPI.

The abode of the KUSAPPI (*Collocalia fuciphaga*) is much more easy of access than that of its congener above described, as it is either placed at the bottom of a hole, or affixed to the naked rock. In shape it resembles that of the Salangane, but its walls are partially composed of stalks of plants, horse-hair, and blades of grass, not woven, but cemented together with the aforesaid gelatinous secretion, by which it is also attached to the surface of the cliff. The amount of the mucilaginous substance used varies considerably, some nests being in great measure composed of it, whilst such as are formed of very pliable extraneous materials are made to a certain extent without its aid. Bernstein gives the following account of the process of building the nests of the Kusappi, and has proved the accuracy of his statements by numberless experiments, having even drawn the slimy thread himself from the bird's beak. "Shortly before the breeding season," says Bernstein, "the glands beneath the tongue of these birds become unusually distended, and present the appearance of two large swellings, which diminish considerably in size after the nest is completed. When about to make the foundation of its future abode, the Kusappi presses its tongue against the rock that is to serve for a support, and then, retiring a few paces, draws out a long gummy thread, which dries with great rapidity; this process is repeated, until a crescent-shaped mass is formed, and firmly fastened to the stone. The bird then takes the blades of grass, or stalks of other plants, one after another, from a heap it has already prepared, and cements them together by a similar operation, producing, as it turns its head from side to side, in order to draw out its thread, the undulating lines so frequently seen upon these remarkable structures, and this process is continued until the nest has assumed the necessary dimensions." The Salangane's method of proceeding is essentially

similar to that adopted by the Kusappi, but, as we have already said, it builds entirely with the gelatinous threads, without any foreign admixture. We have frequently remarked that such of these birds as are well fed exhibit a much more considerable enlargement of the glands than is observable in those that have only been able to obtain a scanty supply of nourishment. This fact explains the reason why so much difference is constantly noticeable both in the size and beauty of these much-prized nests, millions of which are annually consumed, such as are very clear and delicate often realising fabulous prices. Java is particularly rich in this article of commerce, and Epp thus describes



THE WHITE-THROATED PRICKLY-TAILED SWIFT (*Acanthylis caudacuta*).

one of the localities in which the nests are most numerous met with:—"The Karang Kallong," he says, "is a huge chalk rock, rising perpendicularly from the sea, by which it is surrounded, and is garrisoned with a force of twenty-five men, whose sole duty is to protect the birds while building. A large tree grows at the edge of the steep, and from this point of view those who venture to look down behold the busy workers swarming beneath, appearing in the distance no larger than bees. The sides of the precipice contain nine caverns, each of which has its name, and can only be entered by a man lowered from above; should the rope break, his death is inevitable, and even if this danger be escaped, the task of finding the entrance to the cavern is attended with great peril, as the foaming waves constantly dash high enough to conceal it from view. The natives who engage in this

terrible undertaking fortify themselves for their task by a dose of opium, and offer up a prayer to the Goddess Njaikidul before making the descent." In 1847 no fewer than 2,700 people inhabited the summit of the Karang Kallong, and of these 1,500 men were thus employed. Enormous numbers of nests are exported annually from this place to China, and are sold at very high prices; but those who thus risk their lives to obtain the expensive luxury are but poorly remunerated. We



THE STEEPLE SWIFT (*Cypselus apus*).

are but little acquainted with the habits of these birds, except that they fly with great rapidity, and constantly frequent the sea-shore.

The PRICKLY-TAILED SWIFTS (*Acanthylis*) are distinguished from other members of their family by the very peculiar construction of their tail-feathers, the shafts of which extend beyond the web; the plumage is also thicker, and the tarsi longer and more powerful than in most other species.

THE WHITE-THROATED PRICKLY-TAILED SWIFT.

The WHITE-THROATED PRICKLY-TAILED SWIFT (*Acanthylis caudacuta*) is about eight inches and a half long, and twenty broad; the wing measures eight and the tail two inches. The head, upper tail-covers, sides of the wings, quills, and tail are pale black, with a metallic greenish blue gloss; the back and shoulder-feathers are whitish brown, the breast and nape white. The under side is blackish brown, the lower wing-covers and a streak on the side of the head are white, more or less intermixed with glossy, blackish blue feathers. The inner web of the secondary quills is also white; the beak is black, the foot lead-colour, and the eye deep brown.

We learn from Jerdon that this species is found in the south-eastern provinces of the Himalaya, Nepaul, Sikkin, and Bhotan, and that its flight is extraordinarily light and rapid. The breeding settlements are generally at a considerable height in the mountains, but always below the snow boundary. The strange prickly tail appears to be employed to assist the bird while climbing. Further particulars as to its habits and mode of life are entirely wanting.

THE DWARF SWIFT.

The DWARF SWIFT (*Cypselus parvus*) is a small species found in some parts of Central Africa, where it usually frequents the forests or woodland districts. Its length does not exceed five inches and a half, and its breadth is eleven inches. The plumage is almost entirely dark grey, lightest upon the throat; the wings are of a brownish hue. In its general habits the Dwarf Swift resembles its congeners, but the structure of its nest is so remarkable as to merit a minute description. Brehm tells us that upon one occasion, whilst travelling in the vicinity of the Blue River, he was attracted by cries uttered by one of these birds as it flew backwards and forwards near a lofty palm whose branches towered above the surrounding trees. On going nearer the spot, he observed that the Swift kept disappearing, as it were, within one of the large, fan-like leaves, against the glossy green of which several white objects were distinctly visible. Thinking this circumstance somewhat extraordinary, he climbed the tree, and found, to his no small astonishment, that the said green leaf was the nest, and the white objects, the eggs, of the noisy bird. We should, perhaps, be more accurate if we said that the leaf formed the outer part of the nest, the actual chamber for the young being composed of cotton wool and feathers, fastened together with saliva, and in shape resembling a round spoon: the interior did not exceed two inches and a half in diameter." Guided by a most wonderful instinct, this little builder seems perfectly aware of the danger to which its aerial abode is exposed from a strong wind, and takes the very safe precaution of gumming with her tenacious spittle not only the nest and eggs, but the nestlings also, firmly to the leaf. Another peculiarity in the domestic arrangements of this species is that the two white eggs that compose a brood are fastened end upwards, in the very limited bed prepared for their reception.

THE PALM-TREE SWIFT.

The PALM-TREE SWIFT (*Cypselus palmarum*) constructs its nest in a very similar manner to the Dwarf Swift.

THE STEEPLE SWIFT.

The STEEPLE SWIFT (*Cypselus apus*) is from six to seven inches long and fifteen and a half broad; its wing measures six and a half, and tail three inches. Its plumage is of a blackish brown, with the exception of the throat, which is white; the eyes are brown, the beak and feet black.

The Steeple Swifts are met with throughout the southern countries of Europe, in Central Asia, and over the entire continent of Africa. They appear in Europe with the utmost regularity on the

first or second of May, and usually leave about the first of August. Such of them as are seen after that period find their way to us from more northern countries, having been left behind by their companions. The migrations of these birds are undertaken in large flocks and are usually commenced at midnight. Like all its congeners, the Steeple Swift is extremely restless, active, and lively in disposition, but differs considerably in its habits from all other members of its family. The air is its home, and almost its entire life is passed upon the wing. From early morning it may be seen, either sailing through the sky at a considerable height, or skimming along in its tortuous course as it pursues its insect prey. In general, however, it is only towards evening, or if the sky be wet or cloudy, that it approaches the surface of the earth. Such of these birds as inhabit the Canary Islands are an exception to this rule, for, according to Bolle, they invariably seek the shelter of their holes for a couple of hours during the forenoon. So extremely awkward are the movements of this species when upon the ground, that it is commonly supposed to be unable to rise if it should chance to alight on *terra firma*. This idea is, however, incorrect, for with the aid of its wings it is enabled to make a violent spring, and thus recommence its flight. The feet of the Swift are almost useless for walking; they are, however, invaluable assistants to the bird when climbing, and the sharp claws with which they are armed are most formidable weapons of defence against its adversaries. The sight and hearing of the Steeple Swifts is excellent, but in every other respect they are far below their congeners, with whom they live in a constant state of warfare; even towards their own species they exhibit the same violent and revengeful disposition, falling upon and clawing each other with such violence as often to tear the flesh from their opponent's breast. We ourselves have seen the males become so excited in these encounters, as to permit us to approach and seize them with our hands, and Naumann mentions having observed one of these birds dart like a Falcon upon a Sparrow quietly picking up worms in a field, and attack it with such fierceness that the terrified little creature sought refuge between the feet of a man who was standing near the spot.

Steeple, lofty edifices, and in some countries rocks, are the situations preferred by this species when about to build. The nest is constructed of hay, dry leaves, blades of grass, or even bits of rag, cemented into a solid mass by the saliva from the builder's beak. The two or at most three eggs that constitute a brood are white, elongate, and of the same breadth at both ends. The female begins to lay at the end of May; she alone performs the work of incubation, and is fed by her mate if the weather be fine; should it, however, be wet, she is compelled to leave her little family, and go herself in pursuit of insects, as the male can only provide for his own requirements. The young grow very slowly and remain for many weeks under parental care, indeed, they are rarely fully fledged until the end of August. It is by no means uncommon for these birds to avoid all the trouble attendant on nidification, by setting upon and worrying a Starling or Sparrow until they have compelled it to resign its little domicile; under these circumstances, if the eggs of the late occupier have been already laid, the marauder simply covers them with a layer of some elastic material, and on this the female deposits her brood. These Swifts subsist almost entirely on insects, and usually require a large supply of food; they can, however, occasionally fast for a lengthened period.

THE ALPINE SWIFT.

The ALPINE SWIFT (*Cypselus Melba*) is considerably larger and more powerful than the bird last described, its length being about eight, and its breadth from nineteen to twenty inches; the wing measures eight and the tail three inches. The plumage of this species is dusky greyish brown above, and white upon the throat and belly; the rings around the eyes are deep brown, and the feet and beak black. The young are recognisable by the light edge upon their feathers.

All the mountains of Southern Europe, and a large part of Asia, afford a home to the Alpine Swift; it is, however, rarely met with in the central or northern parts of the European continent. According to Jerdon, it is by no means uncommon in India, around the Ghauts, and Neilgherries, and on the Malabar coast; it is also sometimes seen near Madras; and all parts of Africa are visited by these birds during the course of their migrations. Although the favourite resorts of this species are in the mountains in Switzerland, it constantly frequents the steeples of the churches, appearing in that country about the end of March, and only leaving for warmer regions in October. We have been informed by the monks upon Montserrat that the Alpine Swift has been seen from time to time near their cloisters throughout the entire winter. In most particulars of its life and habits this bird closely resembles the Steeple Swift, but it is capable of mounting to even a still greater height in the air. Its voice resembles that of the Kestrel. Like its congeners it is eminently social, and generally flies about in considerable flocks; we have seen thousands at a time swarming around the summit of Montserrat, and Jerdon tells us that they congregate in similar multitudes on the heights of some Indian mountains. Their nests are built in holes of rocks, steeples, or similar situations; they are formed externally of twigs, upon which are laid leaves, straw, rags, paper cuttings, or other materials of like description, the whole being consolidated by means of the glutinous spittle to which we have so frequently alluded. The three elongated white eggs that form the brood are laid at the end of May; the nestlings are hatched by the middle of June, and are fully fledged by the last week in July.

The NIGHT JARS or GOATSUCKERS (*Caprimulgi*) constitute a family of very remarkable birds, in some respects resembling the Swallows and Swifts, but differing from them in many important particulars. Some species fully equal the Raven in size, whilst others, on the contrary, are not larger than a Lark; in all, the body is elongate, the neck short, the head large, broad, and flat, the eye prominent. The beak is broad, short, and tapers towards its tip, which is much compressed; the jaws are unusually large, and the gape wide; the legs are weak, the tarsi short and covered with horny plates, the upper part being occasionally feathered, or quite bare. The toes vary considerably in different species, but are usually weak and short, the centre one only being well developed; this middle toe is sometimes furnished with a large serrated claw. The wings are long and pointed, but not to such a degree as those of the Swallow, the second and third quills, instead of the first, generally exceeding the rest in length. The tail is formed of ten feathers, and differs considerably as to its shape; the plumage, like that of the Owl, is soft, and composed of large feathers; it is usually dark in colour, but much variegated and very delicately marked. The base of the beak is covered with a very remarkable growth of stiff bristles, and the eyes are surrounded with short but thick lashes. In some species the males have long and peculiarly formed feathers in the region of the tail and on the wings.

The Night Jars, or Fern Owls, as they are sometimes called, are found throughout all divisions of our globe, with the exception of its most northern latitudes; two species are met with in Europe, and others occur in America, Africa, and Asia. Though thus spread over the face of the earth, the actual habitat of this group is somewhat limited; certain amongst them occupy mountains, others frequent desert tracts or fruitful plains, but all keep to a certain extent within the limits of their appointed domain, their plumage being usually coloured so as to harmonise and blend with the tints of the rocks, sand, or tree trunks, among which they pass the greatest portion of their lives. Such of these birds as dwell in tropical forests do not migrate; and the greater number skim over the surrounding country at certain seasons; but all those inhabiting northern latitudes withdraw in the autumn towards the south. It is only during these migratory excursions—which often extend as



THE GREAT HORNED OWL

Nyctale grandis

Ch. Audubon del. J. C. Smith sculp.

far as the interior of Africa—that the Night Jars exhibit anything like a social disposition ; in their native haunts each pair keeps entirely apart from others, and never allows the slightest intrusion within the precincts of the locality selected for its abode. It may occasionally happen that some tempting neighbourhood will induce several couples to settle comparatively near together, but under any circumstances the same utter want of intercourse among them is observable. Towards man they by no means exhibit this want of sociability, and in most parts of the earth more or less frequent the immediate vicinity of his dwellings. Almost all these birds seek for insects—upon which they principally subsist—during the night, and retire to sleep within their favourite recesses as soon as morning dawns ; but some American species are an exception to this rule, as they fly about in quest of prey not only in the daylight, but even when exposed to the full glare of the sun. Upon the ground they may be said to recline, rather than to perch or sit, and their gait, when attempting to take a few steps over its surface, is remarkably clumsy ; their powers of flight, however, make ample amends for this deficiency, combining the facility and swiftness with which we are familiar in the movements of the Falcon and the Swallow.

The sight of the Night Jars is very keen, their hearing tolerably well developed, and their temperament by no means so sluggish as those who only see them drowsily perched among the branches during the day are usually inclined to suppose. They make no nest, and are content to deposit their eggs upon the naked ground, without even such scant preparation as the hollowing out of a slight cavity in which they might be more securely placed. Audubon tells us that it is not uncommon for the female, when disturbed, to conceal an egg in her mouth, and hurry with it to a spot where she can brood upon it unobserved. The young (usually not more than one or two in number) are tended and provided for with great care. Despite the important services rendered by this family, its members are in most countries regarded with unaccountable disfavour. One idea prevalent among the peasantry in some parts of Europe is so absurd that we cannot refrain from mentioning it ; we allude to the idea that some species of Night Jars employ their huge jaws in relieving the goats of their milk—a superstition from whence is derived their usual name of Goatsuckers, an appellation conferred upon them from the most remote antiquity.

THE NACUNDA.

The NACUNDA (*Podager nacunda*) has obtained its name from the unusual size of its mouth, and may be regarded as the type of a South American group, distinguished by their powerful body, very broad head, strong beak, and thick plumage ; their beak curves slightly downwards at its tip, and the mouth is surrounded by a growth of very stiff, short bristles ; the nostrils are situated immediately above the upper mandibles. The wings, in which the second and third quills exceed the rest in length, are long and pointed ; the short tail is composed of broad feathers and slightly rounded at its tip. The legs are powerful, the tarsi long and bare, the toes fleshy, and the nail of the middle toe serrated. The plumage of the Nacunda on the upper part of the body is blackish brown, marked with fine reddish yellow lines ; the head is darker than the middle of the back, and the region of the shoulder indicated by large blackish brown spots. The tail-feathers exhibit six or eight dark lines, those of the male being edged with white. The throat, cheek-stripes, and region of the ear are reddish yellow, and slightly spotted ; the belly, legs, lower tail-covers, and a line which passes from ear to ear around the throat are of a pure white ; the breast is marked with undulating lines. The very large eyes are light brown ; the beak greyish brown, tipped with black ; the feet flesh-red, shaded with brownish grey. According to the Prince von Wied, this species is about ten inches long and twenty-seven broad ; the wing measures eight inches and a quarter, and the tail two inches and two-thirds. These birds are principally found upon the vast savannahs of

South America, where they usually frequent such parts as are covered with brushwood ; they are also constantly seen around the Indian villages, and are called Chiangos by the natives. Unlike most of their congeners, they are very social and active, carrying on the pursuit of the insects upon which they subsist in broad daylight. The Prince von Wied assures us that he only once saw any great number of them together, and that was upon a large tract of land in the province of Bahia ; they were flying fearlessly around the horses and cattle, apparently enjoying the intense heat of the sun, to which they were exposed. Schomburghk describes their flight as equalling that of the Falcon in swiftness, and the movements of their wings as resembling those of the Swallow. If disturbed, they endeavour to conceal themselves from observation among the low grass, and exhibit so much dexterity in evading pursuit, as to have given rise, among the Indians, to the strange fancy that the Nacundas possess two pairs of eyes. As night approaches, their melancholy cry is constantly to be heard, as they sweep in large parties around the trees, or over the fields, during their noisy and incessant pursuit of food. Burmeister found a Nacunda's egg in some long grass under a bush ; it was almost cylindrical in form, the shell yellowish white, thickly marked with three shades of brown. Azara states that this species lays two eggs.

The TWILIGHT NIGHT JARS (*Chordeiles*) are recognisable by their slender body, short neck, and large head. Their wings, in which the second quill exceeds the rest in length, are long and pointed. The tail is short, formed of broad, powerful feathers, and more or less forked at its extremity ; the legs are smooth, and the toes short ; the centre toe being armed with a very decidedly hooked and serrated claw. Their plumage is thick, composed of small feathers, and is brighter in hue and more distinctly marked than that of most of their congeners.

THE NIGHT FALCON.

The NIGHT FALCON (*Chordeiles Virginianus*), a well-known member of this group, is an inhabitant of North and South America. Its length is about eight and a half, and its breadth from twenty to twenty-one inches ; the wing measures seven inches and two-thirds. The upper part of the plumage is brownish black, spotted with white and pale brownish red. The secondary quills are dotted with brownish white, and the first five primaries have a broad stripe of white across their centre. The tail is striped with brown and grey, its four exterior feathers being tipped with white ; the under side of the body is greyish white, marked with undulating brown lines ; the throat is surrounded by a broad white line. The female resembles her mate, but the brown parts are darker, and the whitish spots redder, than in the plumage of the male. Her tail has no white spots at its extremity.

"The Night Falcons," says Audubon, "make their appearance in Louisiana about the first of April, during their migrations eastward, but never breed either in that State or in Mississippi. So rapid is their transit through these parts of the country, that the flocks have entirely disappeared within a few days of their arrival, whilst in the Southern States, on the contrary, they are often to be met with from the fifteenth of August till October. These wandering parties generally fly over the towns and villages, and settle from time to time upon the trees or houses, meanwhile uttering a harsh, shrill note, that cannot fail to attract the attention of all who hear it. We have seen them in Maine about June, and in the Central States somewhat earlier. These birds penetrate northwards as far as New Brunswick, but are rarely or never met with in Labrador or Newfoundland." The flight of the Night Falcons is light, animated, and capable of being long sustained, it is accompanied by loud, shrill cries, as the birds alternately soar above the summits of lofty mountains, or, rapidly sinking, continue their course close to the surface of the water. During such times as they are trying to attract the attention of the female part of the community, their evolutions become almost

inconceivably fleet and agile ; it is not uncommon to see one of them, after describing a series of the most elegant gyrations, come rushing down with such headlong velocity towards its intended partner, that it seems to render its death inevitable ; but when within a few yards of the earth the bird dexterously spreads out its wings and tail, and again rises into the air, in order to recommence its sportive manœuvres. Audubon describes the spectacle of several males thus offering and exhibiting their admiration as being most amusing, and tells us that no sooner has the female made her choice, than the happy mate elect at once begins to harry and drive his rivals from the field.

The food of the Night Falcons consists principally of various kinds of small insects ; they consume flies in enormous quantities, seeking their prey during the day, and sleeping at night upon trees or houses, from the tops of which their loud cries may be heard from time to time during the night. The breeding season commences at the end of May ; the two eggs that form their brood have a grey shell, spotted with greenish brown or violet-grey (see Fig. 2, Coloured Plate IV.), and are deposited without any previous preparation upon the ground. The nestlings are at first covered with dark brown down, and are tended with great affection by their parents ; the female especially exhibits unusual boldness and cunning in protecting or concealing her family from danger. When the young are strong enough to perch it is not uncommon for them to sit motionless beside the father and mother for hours, remaining so perfectly quiet and silent as to render it very difficult to discover their place of concealment. Large numbers of these useful birds are shot out of mere mischief. According to Audubon their flesh is excellent during the autumn, at which season they become well-flavoured and fat.

THE COMMON GOATSUCKER.

The EUROPEAN NIGHT JAR or COMMON GOATSUCKER (*Caprimulgus Europæus*) represents a group of birds whose pursuit of food is carried on *exclusively* by night. All the various species of nocturnal Goatsuckers have slender bodies, short necks, and broad wings, not very sharply pointed at the extremity, as the second quill is slightly longer than the first. The tail is almost straight at its tip ; the beak is short and broad, narrow at its base, and curves downwards from beneath the nostrils. The centre toe of the small delicate foot is considerably longer than the rest, and is connected with that on each side by a fold of skin extending as far as the first joint ; the small inner toe is entirely detached from the rest ; the tarsus is partially covered with small feathers, and upon its lower portion is defended by horny plates ; the claw upon the middle toe is serrated. The plumage, which is composed of large feathers, is fleecy ; the upper parts of the body are dark grey, variously marked with brownish black and reddish yellow ; the under side is light grey, streaked and spotted with black and dark brown ; the brow and edges of the jaws are indicated by whitish lines ; the three first quills in the wing of the male are decorated with a white, in the female with a yellow spot. The centre tail-feathers are grey, striped with black ; the rest are paler, and rather *spotted* than streaked with black : they terminate in a pointed white patch. The markings in the plumage of the female are less distinct than in that of her mate, and the exterior tail-feathers are spotted and tipped with reddish yellow. The length of this species is about ten, and its breadth twenty-one inches ; the wing measures seven and a quarter, and the tail between four and five inches. The European Night Jar inhabits some parts of Asia and the whole of our continent, if we except its extreme north and the southern provinces of Spain ; in the latter country it is replaced by a very similar bird, the Red-breasted Goatsucker (*Caprimulgus ruficollis*). It is at present undecided whether the JOTAKA (*Caprimulgus jotaca*), met with in Japan, is identical with the European species. (The egg of the European Goatsucker is represented at Fig. 41, Coloured Plate XVI.)

THE RESPLENDENT GOATSUCKER.

The RESPLENDENT GOATSUCKER (*Caprimulgus eximius*) is a most beautiful bird, inhabiting Northern Africa, remarkable for the brilliancy of its plumage, which is almost entirely of a bright golden hue, marked upon the head, breast, and back with oval *spots*, and upon the wings and tail with *streaks* of a somewhat deeper shade; the throat, vent, a spot upon the pinions, and the tips of the exterior tail-feathers are white. Rüppell, who first discovered these birds in Bahiuda, tells us that they frequent vast steppes, and that their gay plumage blends most deceptively with the yellow stubble and light sand which abounds in their favourite haunts. We ourselves have often met with them in Cordofania.

THE EUROPEAN GOATSUCKER (*Caprimulgus Europæus*).

The BRISTLED NIGHT JARS (*Antrostomus*), indigenous to America, are recognisable by their long, flat beak, which is hooked at its tip, by their prominent tube-like nostrils, and the ten stiff strong bristles, of about an inch in length, that grow at the base of the upper mandible, and can be lowered or raised at pleasure. The second or third quill exceeds the rest in length; the tail is long, but comparatively narrow, more rounded at its tip, and the plumage is also thicker, and composed of smaller feathers than that of such of their congeners as we have already alluded to.

THE WHIP-POOR-WILL.

The WHIP-POOR-WILL (*Antrostomus vociferus*), so called from its peculiar cry, is about nine inches and one-third long, and seventeen and a half broad; the wing measures seven and a half, and the tail five inches. The upper parts of the body are dark brownish grey, spotted with brownish black; the region of the cheeks is brownish red, the wing-covers and quills are dark brown, spotted in lines with a paler tint, the latter tipped with a mixture of both shades; the four centre tail-feathers

resemble the back in colour and markings, whilst those at the exterior are white, slightly spotted on the upper portion, and dark brown towards the end. The upper parts of the throat and breast are dark brown, with blackish brown markings; the rest of the under side is of a paler hue. A yellowish white line passes across the front of the throat. North America is the actual habitat of this species, which is, however, frequently seen in Central America and the West Indies during the course of its migrations.

The AFRICAN NIGHT JARS (*Scotornis*) constitute a group of birds distinguished from their congeners by their remarkably long graduated tail, which far exceeds the body in length; the third



THE WHIP-POOR-WILL (*Antrostomus vociferus*).

quill of the wing is longer than the rest, thereby rendering it less pointed than that of most Goatsuckers; the beak is very small and delicate, and the bristles at its base comparatively long; the inner toes are longer than those on the exterior. The plumage is somewhat difficult to describe; in *Scotornis climacurus* the body is principally of a pale reddish brown, with dark markings; the chin, cheek-stripes, and extremities of the smaller wing-covers are white, the quills black, spotted with grey on the lower half; the first six are striped with white in the middle; the rest are spotted with red and black, and tipped with white. The centre tail-feathers are marked with undulating lines of different shades; those at the exterior are white upon the outer web, and the two next in order terminate in a white spot; the lower side is a mixture of brown and grey, arranged in wave-like curves. The male is about fifteen inches long and twenty broad; the wing measures five inches and a half and the tail full nine and a half. The body of the female is considerably shorter than that of

THE LYRE-TAILED NIGHT JAR (*Hydropsalis forcipata*).

her mate. All the sparsely-covered, sandy plains of Central Africa afford a home to the members of this group. According to our own observations they are rarely found beyond sixteen degrees north latitude; other authorities affirm that they occasionally wander as far as Europe, and have been met with in Provence, but we are inclined to question the accuracy of this statement.

The LYRE-TAILED NIGHT JARS (*Hydropsalis*), a group of very remarkable birds inhabiting South America, are recognisable by their long powerful wings, in which the first quill is much bent; their slender, but comparatively strong beak; their delicate feet, partially covered with feathers, and protected with horny plates upon its lower half; and their remarkably forked tail, which in the male bird is occasionally of great length.

THE LYRE-TAILED NIGHT JAR.

The LYRE-TAILED NIGHT JAR (*Hydropsalis forcipata*), as the species with which we are most familiar has been called, is spotted with brown and yellow upon its body, the centre of the throat being white. The exterior tail-feathers of this beautiful bird are from twenty-six to twenty-eight inches long, while the body does not exceed seven, and the wing nine inches. According to Azara, the Lyre-tailed Night Jar is somewhat rarely met with, as it usually frequents the inmost recesses of the vast forests of South America. Its scientific name, *Hydropsalis*, has been derived from the fact that like other Night Swallows it flies close to the water when passing over the lakes or rivers in search of food.

Some Goatsuckers have certain feathers of their wings so remarkably developed, that they have been called by the Arabs "*the four-winged birds*," and are described by Swainson under the name of MACRODIPTERYX.

THE LONG-WINGED MACRODIPTERYX.

The LONG-WINGED MACRODIPTERYX (*Macrodipteryx longipennis*) has the tail of moderate size, and straight at its extremity; the foot resembles that of the European species; the beak is delicate and furnished with long bristles at its base. The plumage of the *male* bird is characterised by the long appendages which grow between the primary and secondary quills. These appendages, or rather shafts, are frequently seventeen inches long, entirely bare to within six inches of the extremity, where the web grows upon both sides and forms a broad expansion. The wing of the female is entirely without this remarkable structure. The plumage, which is somewhat dusky, is a mixture of red and black; the throat is paler, and the nape decorated with a yellowish tint; the primaries are striped black and red, with a dark tip; the secondaries are black with four red stripes. The centre tail-feathers are grey, spotted and streaked with black. The length of these birds is about five inches: the tail measures from three and a half to four, and the wing six inches and three-quarters.

THE STREAMER-BEARING NIGHT JAR OR "FOUR WINGS."

The STREAMER-BEARING NIGHT JAR, or "FOUR WINGS" (*Cosmetornis vexillarius*), is another remarkable species, closely allied to that above described, but distinguished by the development, not of one only, but of two excessively long feathers, that grow from each wing. These peculiar appendages are furnished with a web upon both sides, extending throughout their entire length. We are entirely without particulars as to the life and habits of this extremely rare bird, which inhabits South-eastern Africa.

All the various groups of Goatsuckers whose outward appearance we have thus briefly described frequent woodland districts or forests, in the immediate neighbourhood of large plains and open fields, as such localities abound with the insects on which they mainly rely for nourishment. Still there are exceptions. The Red-throated Goatsucker, for example, is most frequently seen upon rocks slightly overgrown with trees or shrubs, and though it builds in various situations, prefers plantations of olive-trees, when about to make its nest, whilst the Cream-coloured Night Jar (*Caprimulgus isabellinus*), on the contrary, usually conceals itself amidst the bushes or grass that cover the sandy banks of the Nile. During the day most species seek a shady retreat, and either sit upon the ground whilst reposing, or find shelter upon trees, on the boughs of which they recline, not after the manner of other birds, but in such a position as to allow the entire body to *lie* along the supporting branch, holding themselves, meanwhile, firmly in place by means of their inner toes, and the serrated claw, with which the central toe is furnished; it is only when disturbed from their slumbers that the Goatsuckers perch in the ordinary manner; as soon as the supposed danger is over, they at once resume their favourite attitude. Whilst asleep the eyelids are kept completely closed, but if suddenly awakened, these birds blink, and peer around them, after the fashion of an Owl, and seek to conceal themselves by lying close to the earth, or to the tree on which they are reposing. Upon the ground they move with much difficulty; indeed, it has often been stated that their feet are useless as a means of progression, but this is not the case, as we have on several occasions seen the African Goatsuckers walk some little distance when passing from one resting-place to another. The flight of all these various groups is unsteady and apparently aimless during the day, but at sunset they seem endowed with new life, and may be seen alternately skimming and hovering over the face of the country, in pursuit of moths, beetles, and various other insects, upon which they subsist. When their

appetite is appeased, they rest for a time upon some branch, and then sally forth again before morning dawns to procure a second repast. It is not uncommon for the Goatsuckers to wander to a very considerable distance from their usual haunts during these nocturnal excursions, and even approach the immediate vicinity of towns and villages; nay, so inquisitive and bold are they in regard to the objects they meet with whilst in search of prey, that they will often follow and hover round a man or a dog for a quarter of an hour at a time. During the breeding season their flight becomes still more varied and beautiful, and the birds themselves seem roused to a higher degree of intelligence than is observable at other times; such species especially, as possess the remarkably long wings or tails we have described, cannot fail to impress those who are fortunate enough to see them gliding or hovering aloft, with their flowing plumage alternately closed or outspread, as they perform their light and elegant gyrations through the realms of air. Russegger describes the African "Four Wings" as looking like some strange being from another world, as it whirls along, at one moment appearing to multiply itself by rapidly assuming the most various attitudes, or revolving like a shuttlecock, with its long feathers streaming and twisting in the wind. The voices of these various birds differ very considerably; some species uttering a harsh, droning note, not unlike the sound of a spinning-wheel (whence is derived their name of "Night Jar," or "Night Churr"), whilst others are capable of producing by no means inharmonious tones. The European Goatsucker, when alarmed, purrs very much like a cat, and during the breeding season attracts the attention of its mate by two distinct notes; at other times its cry may be represented by the syllables, "Dak, dak," faintly and hoarsely uttered. So dismal and unearthly are the voices of some American Night Jars, that Schomburghk tell us that neither Indians, Creoles, nor Negroes would venture to shoot one of them, regarding them as direct embodiments of, or emissaries from, the various evil spirits and enchanters, of whose machinations and spells the ignorant natives live in constant dread.

"A Goatsucker," says Waterton, "inhabits Demerara, about the size of an English Wood Owl, whose voice is so remarkable that when once heard it is not to be easily forgotten. A stranger would never believe it to be the cry of a bird, but would say it was the departing voice of a midnight murdered victim, or the last wailing of poor Nlobe for her children, before she was turned to stone. Suppose a person in hopeless sorrow, beginning with a loud note, 'Ha, ha; ha, ha; ha, ha, ha;,' each note lower and lower, till the last is scarcely heard, pausing a moment between each exclamation, and you will have some idea of the moaning of the Great Goatsucker of Demerara. Other species articulate some words so distinctly that they have received their names from the sentences they utter, and absolutely bewilder a stranger on his arrival in their vicinity. One sits down close to your door, or flies and alights three or four yards before you as you walk along the road, crying, 'Who are you? who, who are you?' Another bids you 'Work away; work, work, work away!' A third cries mournfully, 'Willy, come go; Willy, Willy, Willy, come go!' and a fourth tells him to 'Whip-poor-Will, Whip-poor-Will!' in tones wonderfully clear and startling."

As regards their instincts and capabilities, the nocturnal Goatsuckers are far behind the diurnal members of their family, and exhibit so little sense of self-preservation, as constantly to expose themselves to great danger. We have frequently, whilst camping out in Africa, whenever we have kindled a fire, been visited by numbers of these birds, apparently quite regardless of the risk they ran of being brought down by our gun. In Spain, however, the Goatsuckers appear to be somewhat more on the alert; indeed, owing to their supposed dexterity in evading pursuit, they are there called by the peasantry *Engaña Pastor*, or "Shepherd Deceivers," as that class of men come most in contact with these birds, whilst tending their flocks; not from the absurd reason that has obtained such universal credence, but because these much-maligned visitants perform a most invaluable service both to the farmer and his cattle.

"When the moon shines brightly," Waterton continues, "you may have a fair opportunity of examining the Goatsucker; you will see it close by the cows, goats, and sheep, jumping up every now and then under their bellies. Approach a little nearer; he is not shy; 'he fears no danger, for he knows no sin.' See how the nocturnal flies are tormenting the poor kine, and with what dexterity he springs up and catches them, as fast as they alight on the belly, legs, and udders of the poor animals. Observe how quietly they stand, and how sensible they seem of his good offices; for they neither strike at him, nor try to drive him away as an uncivil intruder. Were you to dissect him, and inspect his stomach, you would find no milk there; it is full of the flies that have been annoying the herd."

All Night Jars breed but once in the year, and that always during the spring-time of their



THE OIL BIRD (*Steatornis Caripensis*).

native lands. No nest is built, the parents contenting themselves with any retired, shady nook, when about to deposit their eggs. Towards their young, both parents exhibit great attachment and devotion, and will exert every effort to entice any approaching stranger from the little family. Many strange tales have been circulated as to the manner in which their eggs are conveyed from one place to another, in time of danger, and on this point we may now venture to speak with authority, having been fortunate enough to be an eye-witness to the whole proceeding. Upon the occasion to which we refer, a pair of Night Jars which we purposely disturbed, appeared to be overcome with fear for the space of a minute, then, suddenly recovering themselves, they each seized an egg in their capacious beaks, and bore it carefully and gently away, flying so near the ground as almost to touch it with their feet. Both parents assist in the labour of incubation, and

continue to sit, even after the nestlings have left the shell, in order to keep them warm: according to some authorities, this practice is continued until they are almost fledged. The young are fed during the night, and reared upon a variety of insect food. When taken from the nest, they thrive and grow rapidly, if provided with a plentiful supply of flies.

The GIANT GOATSUCKERS (*Nyctibius*) constitute another South American group, easily recognisable by their strongly-hooked beak, heavy foot, the central toe of which has no serrated claw, powerful body, and large head. The wings (in which the third quill exceeds the rest in length) are long and pointed, the tail long, and slightly rounded, and the plumage rich, soft, and lax. The beak is very peculiar in its formation, and appears triangular when seen from above; the upper mandible is extremely broad at its base, sloping gently downwards as far as the nostrils, from which point it becomes thin, round, compressed, and curves gently over the lower mandible, which is also slightly bent at its tip, and somewhat shorter than the upper portion. The sharp edges of the beak have a tooth-like appendage, about one line in length, placed just where it begins to curve. The jaws open almost to the ears, and the gape is therefore enormous. The horny portion of the bill is almost entirely concealed from view by a growth of feathers intermixed with bristles, which covers the upper mandible, from the nostrils almost to the tip. The legs are short, the toes slender, and the claws comparatively strong and hooked. The central nail has a prominent ridge.

THE IBIJAU, OR EARTH-EATER.

The IBIJAU, OR EARTH-EATER (*Nyctibius grandis*), is by far the largest member of this group. Its length, according to the Prince von Wied, exceeds twenty-one, and its breadth forty-seven inches; the wing measures fifteen inches and a half, and the tail ten inches and one-third. A whitish or greyish yellow predominates in the coloration of the plumage, which is darkest upon the upper portion of the body, and marked with a variety of fine brown and black lines; the head-feathers have dark streaks upon the shafts, and triangular spots at the tip. The edges of the wings and region of the shoulders are deep reddish brown, streaked with black, and intermixed with white spots upon the carpal joint; the under side is white, ornamented with curved brown lines, each feather being tipped with yellow, the quills are dark greyish brown, striped with a paler shade, and spotted with white upon the outer web, the tail-feathers are decorated with six or seven dark and light stripes, the throat is white, marked with brown, as is the breast, the latter is also streaked longitudinally with black; the hinder parts of the body are pure white; the beak and feet are yellowish grey, and the eyes dark blackish brown.

These large Goatsuckers, though by no means rare in South America, are not frequently seen, as they remain during the entire day ensconced at the summit of the most lofty trees, lying full length upon the thickly foliated branches in the manner already described. So closely does their plumage resemble the bark of the trees on which they recline, that it is very difficult to detect their presence, and so extremely dull are some species that, as the Prince von Wied tells us, they allow themselves to be fired at repeatedly without attempting to stir, or will sit quietly and permit a snare to be thrown over their heads. We cease to wonder at such utter stupidity when we learn from the same source that though the body of these Swallows equals that of the Raven, their brain does not exceed a hazel-nut in size. Evening has no sooner set in than, like their congeners, they at once commence their search for moths and similar prey, in pursuit of which they soar to a very considerable height; and it is by no means rare to find the ground completely strewn with the wings of the enormous moths and butterflies which they attack and seize in their huge beaks. During the night their dismal cry is constantly heard, as one mate calls to the other; but when morning approaches they seek their

favourite retreats. Burmeister tells us that the two eggs that constitute a brood are deposited in any slight cavity in the trees. Such as he obtained were oval in shape, with a lustreless, pure white shell, thickly covered with brown dots of various shades, most thickly strewn over one end.

THE GUACHERO, OR OIL BIRD.

The OIL BIRD (*Steatornis Caripensis*) has hitherto been classed among the Goatsuckers, but it differs so essentially from any other member of that family in its mode of life, that we have decided upon describing it entirely apart. The body of this remarkable species is slender, the head flat and broad; the wing, in which the third and fourth quills exceed the rest in length, though long and pointed, does not extend as far as the extremity of the well-developed tail. The beak is broad at its base, compressed in the middle, and terminates in a hook; its tip, moreover, is furnished with two denticulations; the gape extends to the eyes, but the lower mandible is feeble and considerably shorter than the upper part of the beak. The feet are so small as to be almost useless upon the ground: their soles are callous, and the tarsi without feathers; the front toes are all of equal size, entirely unconnected, and the short hinder toe is reversible. The plumage is extremely soft, almost silky, and the region of the beak is overgrown with long bristles; the large eyes are protected by heavy lids covered with long hairs. The gullet is not dilated into a crop, and the stomach is very muscular; the entrails are covered with a fatty layer of such thickness that they may be said to be embedded in fat. The plumage is of a beautiful reddish brown, deepest in shade upon the back; the head, breast, belly, wings, and tail are rust-red, marked with heart-shaped white spots, which are here and there surrounded by a black line. The eye is blueish black, the beak and feet horn-grey. The length of this species is about twenty-one inches, and its breadth about forty-two inches. Humboldt, who discovered this remarkable bird in 1799, found it living in the rocky caverns of Caripe, and more recent travellers have met with it in the dark clefts and fissures of rocks among the Andes.

“The Cueva del Guachero, or Cave of the Guacheros,” as described by Humboldt, “is a vast fissure, pierced in the vertical profile of a rock, facing towards the south; and the rocks which surmount the grotto are covered with trees of immense height; succulent plants and orchidaceæ rise in the driest clefts, and plants waving in the wind hang in festoons at the entrance. Within the cave vegetation continues to the distance of forty paces. Daylight penetrates far into the grotto, but when the light begins to fail the hoarse voices of the inhabitants become audible, and it would be difficult to form an idea of the horrible noise occasioned by thousands of these birds in the dark parts of the cavern. Their shrill and piercing cries strike upon the vaults in the rocks, and are repeated by the subterranean echoes. The Indians showed us the nests of the Guacheros by fixing a torch to a long pole; these nests were fifty or sixty feet above our heads, in holes of the shape of funnels, with which the roof of the grotto is pierced like a sieve. The noise increased as we advanced, the birds becoming scared by the torches we carried; but when the din somewhat abated, immediately around us we heard at a distance the plaintive cries of others at roost in the ramifications of the cavern. It seemed as if different groups answered each other alternately. The Indians enter the Cueva del Guachero once a year, near Midsummer. They go armed with poles, with which they destroy the greater part of the nests. At that season several thousand birds are killed; and the old ones, as if to defend their brood, hover over the heads of the Indians, uttering terrible cries. The young, which fall to the ground, are opened on the spot. Their peritoneum is found extremely loaded with fat, and a layer of fat reaches from the abdomen to the vent, forming a kind of fatty cushion between the legs. At the period commonly called at Caripe the “oil harvest,” the Indians build huts with palm leaves near the entrance and even in the porch of the cavern, where, with a fire of brushwood, they melt in pots of clay the fat of the young birds just killed. This fat is known

by the name of butter or oil (*mantece* or *aceite*) of the Guachero ; it is half liquid, transparent, without smell, and so pure that it may be kept above a year without becoming rancid. At the convent of Caripe no other oil is used in the kitchen of the monks but that of the cavern, and we never observed that it gave the aliments a disagreeable taste or smell."

Funck, who also visited the cavern above described, states that the Guacheros leave their nests after darkness has completely closed in, and that their harsh, raven-like cry may then be heard as they fly about in quest of food. Fruit forms their usual nourishment, and this they will swallow, even if as large as a Pigeon's egg ; but the seeds and kernels they reject as indigestible. The nest is constructed of clay, and the brood consists of from two to four eggs. Grosz also gives an account very similar to that of Humboldt respecting another stronghold of the Oil Birds, called the Ravine of Iconongo, that he visited in New Granada. This extensive nesting-place is about half a mile long, and from thirty to forty feet broad, and had to be entered by means of a rope let down from above. Grosz fortunately succeeded in obtaining many Guacheros, both dead and alive, and made valuable observations relative to their demeanour and habits. Their movements in the air, he tells us, are light and rapid, the pinions and tail during their flight being held fully expanded ; upon the ground their gait is extremely awkward, their feet requiring assistance from the wings, even to sustain the creeping hobbling motion to which their progress when on *terra firma* is restricted. Whilst thus attempting to walk the tail is slightly raised, and the head and neck bent forward in a constant succession of serpent-like movements, in order to maintain their balance. When perched they keep the body erect, supporting it slightly upon the wings, and hang the head droopingly. If much excited whilst in flight, the cry of the Guachero becomes positively unearthly, so dismally hideous are its tones. Both parents brood alternately upon the eggs, which, according to Grosz, are white and pear-shaped. No preparations whatever are made for the reception of the young family, the eggs being merely deposited in the clefts of the rocks. The nestlings, when first hatched, are extremely ugly and uncouth, and completely helpless until they are fully fledged ; so extraordinarily voracious are they that, if other food is not on the spot, they will fall furiously upon each other, or even seize and drag at their own feet or wings.

The OWL SWALLOWS (*Podargi*) constitute a family bearing considerable resemblance to the Night Jars, both in their general appearance and mode of life. These birds have a slender body and short neck ; their head is broad and flat, their wings short and blunt, their tail long, their tarsi high and powerful. The beak, which opens farther back than the eyes, is large, flat at its base, and broader than the brow ; the mandibles are hooked at the tip, of equal length, and smooth at the margin ; the nostrils are situated at the base of the beak, and are almost entirely concealed beneath the feathers of the forehead. The foot is short, with three of the toes placed in front, and one pointing directly backwards ; the latter is not reversible. The plumage is soft, and dusky in its coloration ; the region of the beak, and, in some cases, that of the ear, is covered with a growth of bristles.

Such of these birds as we are at present acquainted with, inhabit the forests of Southern Asia, as also of New Holland and the neighbouring islands ; but little has as yet been ascertained respecting their general habits, and we must therefore confine ourselves to the mention of those species with which we are best acquainted.

The DWARF OWL SWALLOWS (*Egothales*), found exclusively in New Holland, are recognisable by their long but powerful body, nearly round head, short, rounded wing (in which the second quill exceeds the rest in length), long, rounded tail, and comparatively high and bare tarsi ; the toes are of equal length and unconnected ; the beak is thick, broad, and compressed at its base,

but becomes suddenly narrow towards its extremity, and terminates in a flat hook ; the lower mandible is furnished with a hollow rim that encloses the curved tip of the upper part of the beak. The plumage is soft in texture, except around the beak and in the region of the eyes and brows, these parts being covered with a bristle-like growth.

THE TRUE DWARF OWL SWALLOW.

The TRUE DWARF OWL SWALLOW (*Egotheles Novæ Hollandiæ*) is about nine inches and a quarter long, and above twelve in breadth. The upper part of the body is dark brown, streaked with white ; the entire under surface, a spot near the eye, and two sickle-shaped lines, the one on the neck and the other at the back of the head, are grey, dotted with black and reddish yellow ; the anterior quills are brown, spotted with light brown and grey on the inner web ; the tail is dark brown, regularly



THE TRUE DWARF OWL SWALLOW (*Egotheles Novæ Hollandiæ*).

striped with grey, and dotted with black ; the iris is nut-brown ; the feet of a pink flesh-colour. The sexes are alike in size, and similarly tinted, but the plumage of the young is darker than that of the adult bird. Gould tells us that this species lives and breeds in all woodland districts throughout Southern Australia and Tasmania, and that it also frequents the shrubs and bushes upon the coast. Its flight is direct and slow, and, when perched, its attitudes resemble those of an Owl ; like that bird, if disturbed, it turns its head rapidly in all directions, and emits a low, hissing sound. The Dwarf Owl Swallow breeds twice in the year, and deposits its four or five round pure white eggs in the hollows of trees. One strange habit possessed by this bird renders the discovery of its retreat very easy ; for no sooner is any unusual sound made in the vicinity of its hole than the active little occupant at once scrambles up to the entrance, and putting out its head, peers around to discover the cause of the disturbance. Should danger seem imminent it at once takes flight, and seeks safety elsewhere ; but should nothing alarming be in view, it quietly returns to the bottom of its abode, until again roused by some voice from the outer world.

The GIANT OWL SWALLOWS (*Podargus*) are birds of considerable size, with large flat heads, moderately large wings, in which the first quill exceeds the rest in length, long rounded tails, and short tarsi, furnished with a foot of moderate size, the two innermost toes connected by a fold of skin. The beak is hard, powerful, much broader than it is high, slightly curved at the roof of the upper mandible, and very decidedly hooked at its tip, which fits into a corresponding groove in the lower portion of the beak; the gape extends as far as the hindermost corner of the eye. The plumage is soft, and resembles that of the Owl. The beak has but a sparse growth of bristles.

THE GIANT OWL SWALLOW.

The GIANT OWL SWALLOW (*Podargus humeralis*) is a bird about the size of a Crow. The upper part of the body is brown marked with greyish white and dark brown, the top of the head being streaked with blackish brown, and spotted with white. The quills are brownish black, marked with rows of spots upon the outer, and striped upon the inner web; the beak is light brown shaded with purple; the feet and eyes are yellowish brown. The many varieties of this species resemble each other both in appearance and habits.

"Like the rest of the genus, the *Podargus humeralis* is strictly nocturnal, sleeping throughout the day on the dead branch of a tree, in an upright position, across and never parallel to the branch, and which it so closely resembles as scarcely to be distinguishable from it. I have occasionally seen it beneath the thick foliage of the Casuarinæ, and I have been informed that it sometimes shelters itself in the hollow trunks of the Eucalypti, but I could never detect one in such a situation. I mostly found them in pairs, perched near each other on the branches of the Gums, in places not at all sheltered from the beams of the mid-day sun."—GOULD.

The sleep of the Giant Owl Swallow is so profound that one of a pair may be shot from a branch without the mate that is sleeping at its side being roused, and the heavy sluggard may be pelted with stones, or struck with a stick, without being awakened from its slumbers. Should it at last be roused to consciousness, it scarcely exhibits animation sufficient to prevent it from falling to the ground, as it slowly flutters, in a semi-torpid state, to the nearest tree, when it at once perches, and falls into a sleep as heavy as that from which it has just been disturbed. No sooner, however, has night set in, than the previously drowsy stupid bird becomes a new creature, and after carefully preening its plumage, at once proceeds to run actively and briskly up and down the branches of trees in search of Grasshoppers; it also extracts larvæ from under the bark, after the manner of Woodpeckers, or dives down holes and fissures to find any delicate morsels that may be concealed within. Its flight is not particularly good, owing to the shortness of its wings, but it passes with considerable rapidity from tree to tree, and occasionally amuses itself by a variety of manœuvres in the air. Gould is of opinion that this species lives entirely upon insects, but Verreaux affirms that it frequents morasses during winter, when food is scarce, and consumes snails or other inhabitants of the water, and that in the breeding season it will attack young birds, kill them by repeatedly striking them against the stem of the tree, and then devour them. The pursuit of prey is carried on late in the evening, and again just before dawn, the intermediate hours being devoted to the process of digestion, combined with heavy sleep. The breeding season commences about July, and is ushered in by repeated battles between the males, whose loud voices become louder and more dissonant as they dispute possession of a female, or exert themselves to please her with their vocal efforts. Both parents co-operate in building their small, flat nest, which is most carelessly constructed of fine twigs lined with grass and feathers, and is usually placed in a forked branch at about five or six feet from the ground. The eggs are from two to four in number, their shape is elongate, and their colour pure white, so that they are often distinctly visible through the thin walls of their slightly constructed abode. Both



THE GIANT OWL SWALLOW (*Podargus humeralis*).

parents assist in their incubation, the father sitting upon them during the night, and seeking food during the day, whilst the female takes her place upon the nest in his absence. Should the sun's rays prove too powerful for the young, they are carried to a shady nook or hole until mid-day is passed. By November they are fully fledged, but remain for some time longer under parental care and tuition. Gould and Verreaux both inform us that if the season be unusually cold, it is not uncommon for the Giant Owl Swallow to remain for a time in a hole, or on a branch, in a state of complete torpidity. Such of these birds as we have seen caged in Europe were extremely tame, and would not only eat from the hand, but allowed themselves to be carried about the room without any sign of fear.

The FROG-MOUTHS (*Batrachostomus*) constitute a group of comparatively small birds, inhabiting India and its neighbouring islands. Though smaller than the Giant Owl Swallow, they have a still larger beak, which is very broad and flat at its base, slightly arched at its tip, and terminates in a hook; the upper mandible projects over the lower one in all directions; the nostrils are small and covered with feathers, and the wings abruptly rounded; the tail is long, and is either graduated, or has the outer feathers very short; the tarsi and feet are small but strong, the toes powerful and very flexible.

THE PLUMED FROG-MOUTH.

The PLUMED FROG-MOUTH (*Batrachostomus cornutus* or *B. Javanensis*) is an inhabitant of Java, and distinguished from its congeners, not only by the remarkable arrangement of the head-feathers, but by the beauty of its plumage. In this bird the region of the ears and brow is covered with a plume of long, ragged feathers, which hangs down over the eyes and makes the head appear of a size very disproportionate to the rest of the body. The plumage on the back is light rust-red, marked with fine zig-zag black lines, the nape being adorned with a white crescent-shaped patch; the shoulder-feathers are tipped with white spots thrown into relief by an ornamented semicircular line of black at their tips; the brow is marked with reddish yellow spots. The centre of the throat and upper part of the breast and belly are white, partially marked with zig-zag lines; the lower breast is rust-red, spotted with black and white; the tail is light reddish yellow, striped seven or eight times with a deeper shade, and streaked with black; the quills are similarly decorated. The eye is sulphur-yellow, the feet brown, and the beak pale yellow. This extraordinary looking bird chiefly inhabits the thickets of allangallany palm-trees that abound in Java at about 3,000 feet above the level of the sea. Bernstein, who was the first to give us any account of it, says nothing as to its life or habits, but has given us a description of the nest. This delicate little structure, which is formed almost entirely of down from the body of the bird, is placed in a hole within the stem of the palm, and is so small as to render it impossible for the parent to sit in it whilst engaged in the process of incubation. The female is therefore compelled to lie along the stem that encloses her snug cradle, and whilst holding firmly on with her feet, presses her breast against the opening of the nest, and thus imparts warmth to her young. The one egg found by Bernstein was oval in shape and of a dull white, streaked and spotted with brownish red; these markings were most thickly strewn over the broad end, where they formed a kind of wreath.

Another very similar species (*B. auritus*) has the face ornamented with a pair of large tufts of light feathers that project horizontally, giving the bird a very singular and grotesque appearance.

THE SINGING BIRDS (*Oscines*).

UNDER this name we class numerous families, all of which are more or less distinguished for the perfection of their vocal apparatus. In appearance the members of this order are for the most part pleasing and elegant, and their disposition usually attractive and engaging. Their body is long, the neck short, and their head comparatively large; the beak, though differing much as to its formation, is almost invariably small, straight, or only very slightly curved, and the upper mandible is generally more or less incised; the tarsi are covered with horny plates, the toes long, and the claws large and sharp; the wings, invariably of moderate size, are formed of ten quills, the first of these being usually much stunted or not at all developed; the tail is by no means large, and composed of twelve feathers. The plumage, which is soft, thick, and occasionally downy in texture, is simple and uniform in its coloration; some few species, however, are brilliantly ornamented. The young at first differ considerably in appearance from the adult birds, and both young and old moult their feathers once within the year. All the members of this extensive order are active, intelligent, and extremely restless; their flight is light and rapid, and their movements amongst the branches or upon the ground are distinguished by extraordinary agility. In all, the sight and hearing are very perfect. They live chiefly upon insects and seeds of various kinds, but some few species will kill and devour small birds or similar prey. Every part of the world is enlivened by the presence of these delightful warblers, whose cheerful voices are heard even in the most dreary and desolate regions, on burning, sandy plains, as well as upon the ice-bound shores of arctic regions. Such as inhabit tropical climates do not migrate; but those within the temperate zones, as winter approaches, remove towards the south, seeing that their native lands at that season do not afford them a sufficient supply of food. Very great variety is observable in the construction of the nests built by different species of singing birds, many exhibiting wonderful skill, and in some cases actually *sewing* together the materials they employ, with their sharp beaks, whilst others are contented to drag a few leaves into a hole and thereon deposit their brood. The eggs, sometimes five or six in number, are hatched by the agency of both parents, who also assist each other in procuring food for the young progeny. The latter grow with great rapidity, and are capable of providing for a family of their own after the first year.

The TOOTH-BEAKED SINGING BIRDS (*Dentirostres*) constitute a large tribe, the members of which are at once recognisable by a notch or tooth at the extremity of the upper mandible.

The SHRIKES (*Lanii*) are a very numerous and well-known group, equally common in all parts of the world. In these birds the body is powerful and the breast prominent; their neck is strong, the head comparatively large and round, the wings broad and rounded, the third or fourth quill far exceeding the rest in length, while their tail is long and graduated. The beak is powerful, compressed at its sides, and terminates in a strong hook, near which the upper mandible has a very perceptible tooth-like appendage. The feet are large and robust, the toes long, and armed with sharp claws; the plumage is rich, thick, and lax, and its coloration pleasing and varied.

Woods surrounded by meadows or pasture lands are the favourite resorts of these birds; but they are also constantly found dwelling in hedges, among brushwood, or upon solitary trees. Such species as frequent northern latitudes migrate regularly during the autumn, and find their way, in

pursuit of food, even to Central Africa. In their habits they closely resemble some of the birds of prey, and their movements bear considerable similarity to those of the Raven family. Although by no means conspicuously endowed in most respects, the voice in some species is highly developed, and all seem capable of improving their natural powers of song, by imitating the sounds produced by other birds. Their flight is irregular, and their step upon the ground a mere series of hops; but, despite these deficiencies, they display great dexterity in securing their prey, even should it equal themselves in size; and are exceeded by no other members of the feathered creation in rapacity and the cruelty which they display towards their victims. They devour insects in large quantities, but by no means rely solely upon them for food, for they destroy great numbers of Sparrows and other small birds; and their attacks are all the more dangerous as they are entirely unsuspected. It is not uncommon to see a large party of little birds quietly perched around a Shrike, and evidently regarding it as a friendly companion, whilst in reality the treacherous intruder is merely watching for a favourable moment to dart upon and kill some member of the group that it has already singled out as its prey. One very remarkable habit, depicted in the engraving on page 145, is highly characteristic of this family; we allude to the practice of spiking their victims upon sharp thorns, from which circumstance they have obtained the well-merited appellation of BUTCHER BIRDS. The nest of the Shrike is artistically constructed of the green portions of plants, and placed in a thick bush or closely-foliaged branch. The brood consists of from four to six eggs, which are hatched by the female alone, whilst her mate undertakes the duty of providing for her nourishment. Both parents assist in feeding the nestlings, and in defending them. The young remain under parental care and instruction for a considerable time after they are fully fledged, sometimes not leaving it until the winter, for the Shrike, if undisturbed, breeds but once in the course of the year.

THE SENTINEL BUTCHER BIRD.

The SENTINEL BUTCHER BIRD, or GREAT GREY SHRIKE (*Lanius Excubitor*), is from nine and a half to ten inches long, and its breadth about fourteen inches; the wing measures four inches and the tail four and a half. Upon the upper part of the body the plumage is of an uniform light grey; the under side is pure white, and a broad black stripe passes across the eyes. The upper half of the large primary quills, as well as the inner webs and tips of the secondaries, are white, their other portions and the rest of the quills being black; the centre tail-feathers are black, but with the exception of a large black spot upon the centre of the inner web of the fifth, and a black streak upon the shaft of the exterior feather, the rest are entirely white. The eye is brown, the beak black, and the foot dark grey; the plumage of the female is less pure in its coloration than that of her mate: the young are recognisable by the wave-like markings upon the breast and other parts of the body. The egg is shown at Fig. 3, Coloured Plate XVI.

This species of Shrike is found in almost every European country, and throughout a large part of Asia and Northern Africa; it is also very numerous in North America. Everywhere it appears to prefer woodland districts, but is nevertheless constantly met with both in mountain ranges and in marshy plains. Whilst on the alert for prey it may usually be seen upon the topmost branches of a tree, peering eagerly about in all directions, in the hope of detecting any small bird or mouse that may be near, pouncing down and killing it with wonderful dexterity as soon as the proper moment arrives. If the destroyer is hungry the prey is at once dragged away and devoured; but should this not be the case, the body is impaled upon a thorn, and left for a future meal. Even when tame it continues this habit, and has been known to make constant use of a spike driven into a wall for that purpose by its owner.

"We have seen," says one writer, "the New Holland Butcher Bird (*Vanga destructor*) act in

this manner when in captivity, and after strangling a mouse or crushing its skull, double it through the wires of its cage, and, with every demonstration of savage triumph, tear it limb from limb and devour it. The bird to which we allude had the talent of imitation in great perfection, and had learnt to sing several bars of airs, with a full-toned musical voice. It executed the first part of 'Over the Water to Charlie' with a spirit that would have gone to the heart of an old Jacobite." The term *Excubitor* or Sentinel was given to the Butcher Bird by Linnæus, from its vigilance in watching against Hawks and other birds of that tribe, whose approach it is ever the first to perceive, uttering at the same time a querulous chattering, indicative, no doubt, of fear and dislike; hence on the Continent it is used by persons engaged in the capture of the Peregrine Falcon.

The flight of this Shrike is slow and undulating, and can rarely be sustained for more than a few minutes at a time; even when merely passing from one tree to another the bird moves in undulating lines, keeping near the ground, and rapidly agitating both its wings and tail. Its sight is excellent, and its sense of hearing so delicate as at once to detect the slightest sound. In disposition it is bold, courageous, and very quarrelsome; during the breeding season it lives peaceably with its mate, but after that period each individual provides only for itself, and carries on an incessant warfare, not only with other birds, but with its own race. The notes of the *Excubitor* vary considerably at different times of the year; in the spring both sexes possess an actual song, which seems to reproduce the sounds uttered by all their feathered companions. The period of incubation commences in April, and both parents assist in the formation of the nest, which is artistically constructed of twigs, straws, and grass, its round interior being lined with wool, hay, and hair. The eggs, from four to seven in number, are greenish grey, spotted with brown or dark grey, and are hatched in about a fortnight. The nestlings are fed at first upon beetles, grasshoppers, and other insects, but at a later period on small birds and mice. Both parents defend the little family with the utmost courage, and continue their care and instructions until the season for migration. When aged, this species of Shrike soon becomes very tame, and easily learns to obey and recognise its master. In former times it was trained for the chase.

THE SOUTHERN SHRIKE.

The SOUTHERN SHRIKE (*Lanius meridionalis*) is very similar to, but more beautiful than the species above described, and is found throughout Southern Europe and North-western Africa; the male is about ten inches long and thirteen broad; the wing measures more than four inches, and the tail four and three-quarters; the female is half an inch smaller than her mate. The plumage is deep grey upon the upper part of the body, and white beneath, the breast being shaded with a rich red; the four centre tail-feathers are black, the eye is brown, the upper mandible dark, and the lower one light blue; the foot is black.

This bird is, we believe, the only Shrike that remains throughout the year in Spain; it arrives in Greece about April, and leaves again in the end of August. Its habits do not differ from those of its congeners already alluded to. The nest, which is usually placed at the summit of an olive-tree, is formed of green stalks, woven together, and lined with sheep's wool and goats' hair; the eggs, four or six in number, are of a dirty white or reddish white, thickly strewn with brown, grey, or red spots of various sizes. These eggs are regarded as such dainties in Spain, that men will often risk their lives in procuring them for the market.

THE GREY, OR BLACK-BROWED SHRIKE.

The GREY, or BLACK-BROWED SHRIKE (*Lanius minor*), is a beautiful species, from seven and a half to eight inches broad, and thirteen and a half to fourteen inches long. The upper part of

the body is light grey, the under side quite white, with the exception of the breast, which is slightly tinged with pink; the brow and cheek-stripes are black, the base of the quills is white, and the remaining portion black; the four centre tail-feathers are black, the next in order white upon the lower half, with a dark spot upon the inner web, whilst those at the exterior are entirely pure white. The eye is brown, the beak black, and the foot grey. The female is exactly like her mate; but the young are dirty white upon the brow, and yellowish white, striped with grey, upon the under surface. The Black-browed Shrike is common in some parts of Europe, especially in Bavaria, Brandenburg, the south of France, Italy, and Turkey; but is quite unknown or rarely seen in most other parts of the Continent. During its migrations it visits Central Africa; we ourselves have seen it in the Nile provinces as early as September, and have never observed it in Europe before May. According to



THE SENTINEL BUTCHER BIRD (*Lanius Excubitor*).

Naumann, this species is by far the most lively and harmless member of its family; its flight is light and graceful, and its capacity for imitating the voice of almost any other bird unusually great. Its food consists exclusively of beetles, butterflies, grasshoppers, and other insects: it also devours larvæ and chrysalids in large quantities. When in pursuit of prey it shows great agility, and usually watches its victims in the same manner as its congeners; but, unlike them, it does not transfix its booty upon thorns previous to devouring it. The nest, formed of hay, straw, wool, hair, and feathers, is placed at the summit of a tree; the eggs, six or seven in number, are greenish white, marked with brownish or violet-grey spots and streaks. Both male and female co-operate in the work of incubation: the young are hatched within a fortnight; they are reared upon insects, and defended with much courage by their parents, who chase every feathered intruder to a distance, and will even venture down to confront a man, should he approach too near the little family. Large numbers, however, in spite of all their efforts, are destroyed by Hawks, Crows, and other formidable neighbours.



BUTCHER BIRD AND FLY-CATCHERS.

The BUTCHER BIRDS PROPER (*Enneoctonus*) are very easily distinguishable from the above-mentioned groups by their short, strong, and slightly hooked beak, and by the variety of plumage observable in the male and female. This group contains two distinct species, of which we are about to describe the most generally known.

THE RED-BACKED SHRIKE, OR TRUE BUTCHER BIRD.

The RED-BACKED SHRIKE, or TRUE BUTCHER BIRD (*Enneoctonus-Lanius-collurio*), is light grey upon the head, nape, and wings; the mantle is reddish brown; the breast pale rose-pink; a black stripe passes above and beneath the eyes; the quills are of a brownish greyish black, with a light border; the base of each of the secondaries is decorated with a small spot, which, when the wing is extended, combine and form a well-defined line; the centre tail-feathers are brownish black; those next in order are white at the roots, whilst the exterior ones are almost entirely white, and tipped with black. The eye is brown, the beak black, and the foot greyish black. The female differs considerably from the male, her body being reddish grey above and of a whitish tint beneath, marked with undulating brown lines. The young resemble the father, but are spotted slightly upon the back. (See Coloured Plate XIV.) The length of this species is seven inches, and its breadth eleven and a half.

The Butcher Bird is met with in most countries of Europe, from Scandinavia, Russia, and some parts of Siberia, to the south of France and Greece. During its winter migrations it visits the forests of North-eastern Africa, and does not return to Europe until late in the spring. Trees and bushes are the situations it prefers when about to build, and it often makes its nest for years on the same spot, but should it be disturbed, it at once leaves not only the tree but the neighbourhood. In its habits it closely resembles other Shrikes, and in like manner consumes large quantities of insects. The Butcher Bird, however, often continues to kill, long after it has satisfied the cravings of hunger, and pursues small quadrupeds or birds so incessantly as to drive away or destroy all such as have been unfortunate enough to make their homes in its vicinity. This species is constantly in the habit of impaling its captives after they are dead upon thorns, and it is not uncommon to see the bodies of many victims thus secured until their destroyer has recovered his appetite: Naumann tells us that the brain appears to be regarded as the greatest delicacy, and is always eaten fresh. Should a Butcher Bird be disturbed whilst making its meal, it at once takes flight, and does not return.

The nest, which is usually placed in a thorn bush, at no great distance from the ground, is large, thick, and carefully constructed of straw, hay, or moss, woven firmly and neatly together, and lined with delicate fibres or similar materials. The female, who broods but once in the year, lays five or six eggs (Fig. 4, Plate XVI.), of various sizes, shapes, and colours, more or less resembling those of other Shrikes; she alone performs the work of incubation, sitting on her nest with such devotion and care that she will allow herself to be captured rather than quit her post.

The Butcher Bird will frequently live for several years in captivity, and cannot fail to become a favourite, by reason of its wonderful power of imitating not only the voices of its feathered companions, but other sounds, for instance, such as the barking of a dog.

THE RED-HEADED SHRIKE, OR WOOD CHAT.

The RED-HEADED SHRIKE (*Enneoctonus-Phoncus-rufus*), or WOOD CHAT, as it is sometimes called, is seven inches long and eleven broad; the wing measures three and a half and the tail three inches. In the male, the upper portion of the body is black, the under surface yellowish white, the back of the head and nape are reddish brown, and the shoulders and rump white. The female resembles her mate. The plumage of the young is brownish grey, marked with crescent-shaped

black spots ; the wings and tail are brown ; the eyes are dark brown ; the beak blueish black, and the feet deep grey.

The Red-headed Shrike is very numerous met with in Southern Europe, where it not only frequents woodland districts, but settles in the immediate vicinity of houses. As winter approaches it leaves for warmer latitudes, and is very commonly seen in the forests of Central Africa, shortly after the rainy season. In its mode of life this species resembles the Butcher Bird, but it subsists principally upon insects, and only destroys small quadrupeds or birds when compelled to do so through lack of other food. The nest is placed upon a tree, and constructed of dry stalks or green plants, the interior being lined with moss and delicate fibres, feathers, hair, and wool. The five or six eggs that constitute a brood are laid in May ; these have a greenish white shell, spotted with dark grey or brown. When caged, the Red-headed Shrike soon becomes an attractive companion, owing to its great facility for imitating the voice of almost any bird that it may hear.

THE MASKED SHRIKE.

The MASKED SHRIKE (*Enneoctonus personatus*) is of a blueish black upon the upper parts of the body ; the breast is reddish yellow ; the brow, shoulders, throat, and rump are white ; the six centre tail-feathers are entirely black, and the two outer ones pure white, with a black shaft ; the rest are a mixture of black and white. The eye is brown, the beak and feet black. This species, according to Lindmayer, appears in Greece at the beginning of May, and leaves again in the middle of August. It is also met with in large numbers in Egypt and Nubia, remaining in the latter countries throughout the entire year ; whilst such individuals as migrate from Europe penetrate as far as the interior of Africa, and remain there during the winter season. Unlike other members of its family, it perches upon lofty trees, from the summit of which its clear but monotonous voice is constantly to be heard. The nest, which is small and delicately constructed, usually contains six or seven eggs of a yellow hue, spotted with yellowish brown. This species subsists entirely upon insect diet.

The THICK-HEADED SHRIKES (*Pachycephali*) are recognisable by their compact body, powerful head, strong beak, short wings and tail, and powerful feet. All the species belonging to this group are met with in New Holland and the islands of the Pacific, where they perch upon the summits of lofty trees, and climb about among the branches, with the alacrity of Titmice. Insects constitute their principal nourishment ; they also devour large quantities of caterpillars and worms. Their movements are slow and their gait heavy. Their song varies according to the species, some having loud but agreeable voices, whilst others utter a prolonged piping note, varied and repeated in a very peculiar manner. The nest is round, beautifully constructed, and generally placed upon the branches or in a hole of some tree ; it usually contains four eggs.

THE FALCON SHRIKE.

The FALCON SHRIKE (*Falcunculus frontatus*), a member of the group above described, is a powerfully-formed and prettily-marked bird of about six inches in length : the beak resembles that of a Falcon, but neither the hook nor tooth-like appendages are well developed. In both sexes the mantle is olive-green, and the under surface bright yellow ; the sides of the head are white, and marked by a broad black line that passes from the nape across the eyes and over the brow ; the crest and throat are black ; the exterior and secondary quills blackish brown, broadly bordered with grey ; the tail is similarly coloured, but tipped with white. The eye is reddish brown ; the beak black, and the foot blueish grey. The female is smaller than her mate, and of a brighter hue upon the throat. We learn from Gould that this bird is found in New South Wales and Australia, where it alike

frequents thick bushes and such trees as grow upon the open plains; it subsists chiefly upon insects, which are obtained among the foliage or under the bark of the larger branches, or trunks of the trees. In procuring these it displays great dexterity, stripping off the bark in the most determined manner, for which purpose its powerful bill is most admirably adapted. The same author says, "It is very animated and sprightly in its actions, and in its habits closely resembles the Tits, particularly in the manner in which it clings to and climbs among the branches in search of food. While thus employed it frequently erects its crest, and assumes many pert and lively positions. No bird of the same size,



THE FALCON SHRIKE (*Falcunculus frontatus*).

with which I am acquainted, possesses greater strength in its mandibles, or is capable of inflicting severer wounds, as I experienced on handling one I had previously winged, and which fastened on my hand in the most ferocious manner. As far as I am aware, the *Falcunculus frontatus* is not distinguished by any powers of song; it merely utters a few low, piping notes. I could neither succeed in securing the nest of this species, nor obtain any authentic information respecting its nidification." The stomachs of the specimens dissected by Gould were filled with the larvæ of insects and berries.

The BUSH SHRIKES (*Malaconoti*) constitute a numerous group, inhabiting Africa and India. These birds are distinguishable by their comparative length of wing and shortness of tail; the

formation of the latter varies considerably in different species. The beak is long, slender, and but slightly curved or incised; the tarsus high and weak. The thick plumage is brilliant in its hues, and unusually developed on the lower portions of the body. All the members of this family live either in pairs or small parties, amidst the leafy tops of forest-trees, or in such districts as are covered with a thick growth of brushwood. They feed exclusively on insects, but with this exception we are almost entirely without particulars as to their habits or mode of incubation.



THE FLUTE SHRIKE (*Laniarius Aethiopicus*).

The FLUTE-VOICED SHRIKES (*Laniarius*) are recognisable by their elongate body, short neck, head of medium size, and moderately long wing, in which the fourth or fifth quills exceed the rest in length. The rather long tail is rounded at its extremity; the beak is long, very decidedly ~~incised~~, and but slightly incised. The tarsus is high, the toes powerful, and armed with formidable claws.

THE SCARLET SHRIKE.

The SCARLET SHRIKE (*Laniarius erythrogaster*), a species inhabiting Eastern Africa, and replaced in the western and southern portions of that continent by a somewhat similar species (the

Laniarius barbarus), is of an uniform glossy black on the upper portion of the body; the under side, with the exception of the brownish yellow hump, is of a brilliant scarlet; the eye is yellow, beak black, and foot lead-grey. The length of this bird is nine, and its breadth thirteen inches; the wing measures four and the tail three inches and a half. The plumage of the *Laniarius barbarus* is exactly similar, if we except a dull yellow patch upon the top of its head.

THE FLUTE SHRIKE.

The FLUTE SHRIKE (*Laniarius Æthiopicus*) is entirely black upon the upper parts of the body, except a white line upon the wings; the under side is pure white, shaded here and there with rose-red; the eye is reddish brown, the beak black, and the foot blueish grey. The length of its body is nine and a half, and breadth twelve inches and one-third; the wing measures four, and the tail three and three-quarter inches.

Like other members of this group the two species above described lead a very retired life among the sheltering branches of their favourite trees, from whence their most strange and very monotonous song is to be heard almost incessantly throughout the day.

The HOODED SHRIKES are easily distinguishable from the last-mentioned group by their comparatively long, graduated tails, short wings, in which the fourth quill exceeds the rest in length, and remarkably long tarsi.

It is at present uncertain if all the species of Shrikes inhabiting Western and Eastern Africa can be included in this group. The coloration of their plumage is almost identical, and in their habits they closely resemble each other, but considerable variety is observable in their size. All make their homes amidst such thick brushwood as grows close to the ground, and they never seek the shelter of the trees except when very closely pursued. If driven from their favourite lurking-places amongst the bushes and long grass, they fly with rapid strokes of the wing to the nearest shelter, keeping close to the earth as they hurry along, but occasionally hovering for a few moments before concealing themselves. Whilst in search of insects, they run upon the ground with a rapidity and ease far exceeding the powers of any other members of their family.

Except the facts that these birds associate in small parties during the period of incubation, and live alone or in pairs at other seasons, we are without particulars as to their nidification and breeding, and have been unable personally to observe their habits.

THE TSCHAGRA.

The TSCHAGRA (*Telephonus erythropterus*)—the species we have selected for description—is brownish grey upon the upper part of the body, and light grey beneath. A broad black line passes over the head, and another, somewhat narrower, crosses the region of the eye. These lines are separated by a light streak, which is white upon the face, but becomes of a yellow tinge towards the sides. The outer web of the quills is grey, but is so broadly bordered with reddish brown that when the wings are closed they appear to be almost entirely of the latter hue. The upper secondaries are edged with reddish grey; the two centre tail-feathers are grey, marked with dark stripes; the rest are black, tipped with white, those of the exterior have also a light border to the outer web. The eye is reddish brown, the beak black, and the feet lead-colour, with a greenish shade. In length the Tschagra does not exceed eight inches, its breadth is ten inches, the wing measures three inches and the tail three and a half. It is, at present, uncertain whether the very similar birds inhabiting Eastern and Western Africa are identical with this species. In colour they are closely alike, but differ somewhat in size.

THE HELMET SHRIKE.

The HELMET SHRIKE (*Prionops poliocephalus* or *Prionops cristatus*) is easily recognisable by the remarkable plume, composed of stiff, hairy feathers, with which the head is decorated. Some of these hairy feathers cover the nostrils and base of the beak, and incline forwards, whilst the rest rise directly from the top of the head, and combining, form a crest that in shape resembles the upper part of a helmet. The eyelids are brightly coloured, and in texture similar to the cere with which our readers have become familiar in the Raptors. The wings, in which the third quill exceeds the rest in length, although of considerable size, do not cover more than a third of the very long and rounded tail; the tarsi are short, and the toes long. The plumage is soft, thick, and very simply coloured; the mantle-quills and a large portion of the tail are black; the crest, head, nape, and entire under surface white. An indistinct yellowish line passes over the back of the head. The inner web and tips of the primary quills, the tips of the secondaries and the exterior tail-feathers are white; the rest are tinted with a mixture of black and white, in which the former predominates. The eye is pearl-grey, and its lid bright orange, the feet cinnabar-red, and the beak black. Heuglin tells us that the crest of the young bird is short, and shaded with grey. The length of this species is eight and its breadth thirteen inches; the wing measures four inches and a half and the tail thirteen and a half. Rüppell found large flocks of Helmet Shrikes inhabiting the valleys on the Abyssinian coast, where they lived, like their congeners, in low bushes, and subsisted upon insects. Nevertheless, this writer states that he never saw them again in his travels through other parts of that country. We ourselves were, on one occasion, fortunate enough to see a considerable party of these remarkable-looking birds in the forests near the Blue Nile. Such slight observations as we were able to make would seem to indicate that their mode of life is very similar to that of the last-mentioned group. Heuglin only met with this species during the rainy season, and therefore concludes that it is of migratory habits.

The RAVEN SHRIKES (*Thamnophili*) constitute a very peculiar group inhabiting South America, Africa, and New Holland, closely allied to the Shrikes, though differing from them in so many particulars that ornithologists are as yet at variance respecting their classification, founding their difference of opinion upon the peculiar construction of the singing apparatus observable in some species. These birds are for the most part of moderate size, with powerfully constructed bodies; their wings are either of medium length, or short and much rounded, whilst the tail is subject to many varieties of form; the tarsi, which are usually long and slender, always exceed the centre toe in length, this latter is united with the exterior toe as far as the first joint, whilst on the inner side the toes are entirely unconnected. The elongate beak, which is always more or less straight at its culmen, curves abruptly towards its tip, where it exhibits tooth-like appendages. The margins of the bill are sharp and compressed; the plumage of some species is rich, soft, and in many instances striking in appearance, owing to the long and almost wool-like feathers upon the back; the base of the beak is usually surrounded by a growth of bristles.

We are entirely without particulars as to the life and habits of several members of this group, and must therefore avoid any *general* description.

The CROW SHRIKES (*Cracticus*), according to Gould, who first described them, closely resemble the Piping Crows in appearance.

THE MAGPIE SHRIKE.

The MAGPIE SHRIKE (*Cracticus destructor*), the most numerous representative of this section, is of a deep greyish brown upon the upper part of the body; the wings are blackish brown; the top of

the head and nape black ; the rump is white, the under side greyish white, and a white spot lies between the eyes and the base of the beak. The quills are blackish brown, with a white edge to the outer web of the secondaries ; the tail-feathers are black, and, except the two centre ones, are tipped with white. The eye is dark reddish brown ; the beak is grey at its base, and black towards the tip ; the feet are deep grey. The female has darker markings than her mate, and the young are spotted with brown and reddish yellow. The length of this species is about thirteen inches and a half.

Gould tells us that the Magpie Shrikes are found extensively throughout Australia, where they inhabit the brushwood extending from the coast to the mountain tracts ; and, despite their habit of perching almost motionless on the branches whilst on the watch for prey, their presence is speedily announced to the traveller by the constant repetition of their extraordinarily harsh and unpleasing cry. The larger kinds of insects or small birds constitute their principal food ; upon these they dart



THE HELMET SHRIKE (*P. ionops poliocephalus*).

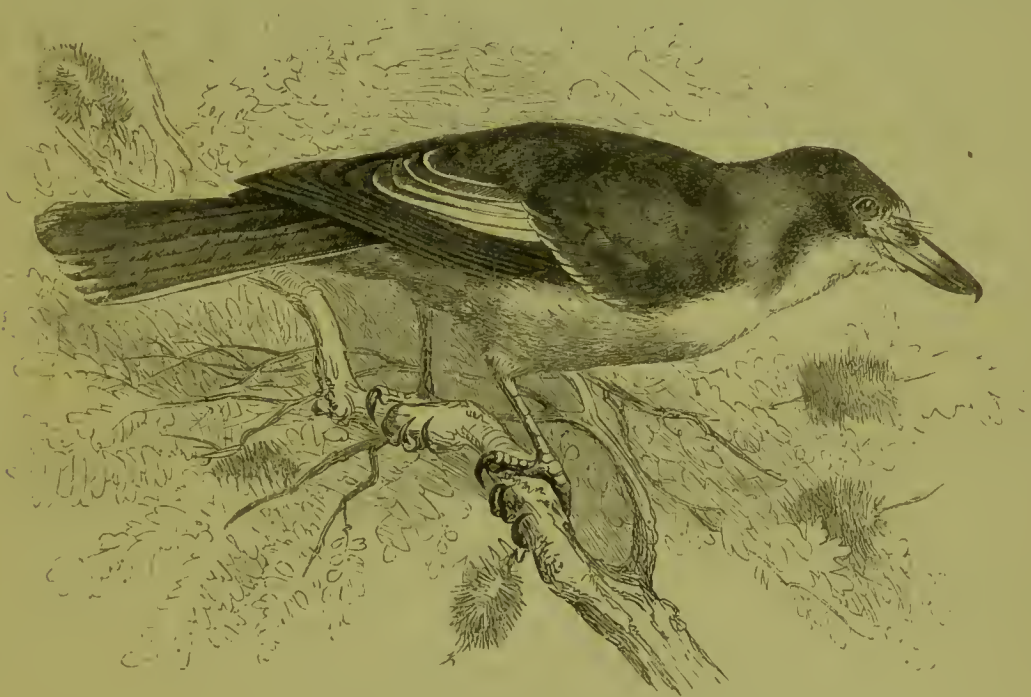
with direct aim, and after killing their prey, return with it to the perch they have just quitted, usually spitting the victim upon a thorn or pointed twig, after the manner of the Butcher Bird, before devouring it. Gould tells us that this species is very daring, even when brought in contact with man, and mentions an instance in which he was followed for more than an hour by a hungry Magpie Shrike, it having discovered that a small bird was imprisoned in his hunting-pouch. The breeding season commences in September ; the nest is large, and neatly constructed of fine twigs, lined with small shoots and delicate fibres. The brood consists of four eggs, with a deep yellowish brown shell, marked with dark spots and tracings of various shades, which frequently take the form of a wreath at the broad end.

The RAVEN SHRIKES (*Thamnophilus*) appear to combine all the peculiarities exhibited by the various members of this group, and in some respects resemble the Jay in appearance. These birds are recognisable by their powerful body and rounded wings, in which the third and fourth quills exceed the rest in length ; the tail is long, composed of broad feathers, abruptly graduated at its sides, and rounded at its extremity. The beak is high, compressed at the sides, and rounded at the

culmen; the upper mandible terminates suddenly in a large hook. The foot is muscular, the tarsus thick and of moderate length, the long fleshy toes are armed with large hooked claws, that of the hinder toe considerably exceeding the rest in size. The plumage is composed of broad feathers, and thus appears thick and rich in texture; the region of the beak is surrounded by a slight growth of bristles.

VIGORS' RAVEN SHRIKE.

VIGORS' RAVEN SHRIKE (*Thamnophilus undulatus* or *Thamnophilus Vigorsii*) is a large bird about fourteen inches long; its wing measures five and its tail six inches. The plumage of the male is entirely black upon the upper side, streaked with white upon the back, wings, and tail; the lower parts of the body are of an uniform dark grey, somewhat paler upon the throat. The female is almost exclusively yellowish brown, the top of the head being blackish brown, and the back, wings,



THE MAGPIE SHRIKE (*Cracticus destructor*).

and tail striped alternately with black and reddish yellow. Burmeister found the Bush Shrike inhabiting the wooded highlands of Rio de Janeiro and Santo Paulo, occasionally in the vicinity of the towns and villages. Such as he observed hopped about amongst the branches at some distance from the ground, repeatedly uttering their monotonous cry. They exhibited no fear of molestation, and would allow a sportsman to approach quite close, even if armed with his gun.

We are somewhat better informed as to the habits of the species of Bush Shrikes mentioned by Azara and the Prince von Wied. These are described as resembling both the Shrikes and the Ant Thrushes (*Pitta*) in form and general appearance. All lead a retired life amidst the bushy foliage of their native forests, and usually prefer the darkest and most secluded localities, seldom quitting these retreats except when flying from one bush to another. The larger species are occasionally met with in the open country, but there, as elsewhere, they keep within the shelter of the brushwood, and only leave their favourite haunts for a few minutes morning and evening. Towards other birds they exhibit little sociability, but are much attached to their mates, each couple keeping together throughout their lives. The voice of the various species is so very similar as to render it almost impossible to

distinguish the one from the other by the ear alone. The Prince von Wied describes their cry as resembling the sound produced by the rebound of a ball from a stone or other hard body, followed by a deep bass note. In some few instances the call is perfectly monotonous. The Bush Shrikes subsist almost exclusively upon insects, but they also destroy small reptiles and young birds. The nest, which is carelessly formed of blades of grass and moss, lined with feathers, is concealed so cunningly as to render its discovery difficult, even by the sharp-eyed natives. The eggs are laid about December; they are of a dirty yellow colour, marked with a wreath of olive-brown spots at the broad end.

The DRONGO SHRIKES (*Edolii*) constitute a family of birds found extensively throughout Africa, Southern Asia, and New Holland; they appear to form the connecting link between the Shrikes and the Fly-catchers. All the various members of this family have slender bodies, long wings and tails, broad beaks, and short feet. The fourth and fifth wing-quills exceed the rest in length; the tail is composed of ten feathers, and is more or less deeply forked at its extremity. The large thick beak is surrounded with bristles at its broad base; the slightly-curved upper mandible is incised at its edges and terminates in a hook; the tarsi are short, the feet small but muscular, and armed with strong claws. The plumage is dark-coloured, thick, harsh, and possesses a very peculiar gloss. Most species are black, others blue, and some few light or deep blue upon the back and whitish beneath; the eye is always bright red, and the beak and feet black. All the members of this family are very similar in their habits and mode of life.

THE KING CROW, OR FINGA.

The KING CROW, or FINGA of Bengal (*Dicrourus macrocerus*), is one of the most remarkable and most numerous of the many species inhabiting India. Its length is about twelve and its breadth sixteen inches; the wing measures five inches and three-quarters, and the tail about six inches. In this bird the entire body is of a resplendent black, deepest in shade upon the wings and tail; the under portions are brownish black; the region of the nape is decorated with a white spot. The sexes are alike in colour, and the young are readily distinguished from their parents by white crescent-shaped spots upon the feathers that cover the under surface. The nest is composed of grass, twigs, and roots carefully put together, and contains from three to five eggs of a white colour, with pale brown or purplish spots.

The Finga is found throughout the whole of India, Assam, and Burmah, as far as China, occupying almost every locality except the densest parts of the jungle. An almost identical but larger bird is met with in Ceylon. We are also acquainted with four other Indian varieties, and several very similar species inhabit Africa and Australia.

The DRONGOS (*Chaptia*) are recognisable from the last-mentioned group by their more delicate feet and less decidedly pointed tails.

THE SINGING DRONGO.

The SINGING DRONGO (*Chaptia musica*) is nine inches long; its wing and tail both measure four inches and a half. The plumage is of a blueish black, enlivened by a most brilliant gloss; the wing and tail-feathers are black; the belly and lower wing-covers dark grey, approaching to black.

Le Vaillant discovered this bird in South-eastern Africa, and more recent travellers have seen it in the northern parts of that continent. India possesses a very similar species, which, however, unlike the rest of the group, frequently inhabits dense thickets.

The FLAG-BEARING DRONGOS (*Edolius* or *Dissemurus*) constitute a group of still more striking birds, with tails in which the exterior feathers are more than twice the length of those in the centre. The lower half of these outer feathers is entirely without web, while at the tip the web is broad at the outer and very narrow on the inner side, so as somewhat to resemble a flag. The beak is comparatively long and powerful, slightly compressed at its base and much curved at the culmen, hooked at the tip, and furnished with teeth-like appendages; the base of the beak is surrounded with thick soft bristles.

THE BEE KING.

The BEE KING of the Indians (*Edolius paradiseus*) is fourteen inches long; the outer tail-feathers are eighteen or nineteen inches in length, while those in the centre do not exceed six inches and a half; the wing measures six inches and three-quarters. The rich plumage is of an uniform black, with a blue metallic gloss. The feathers upon the fore part of the head are prolonged into a crest, and, like those upon the nape and breast, are slightly incised at their extremities.

The DRONGO SHRIKES are met with in large numbers throughout the whole of India, even to an altitude of 8,000 feet, and may constantly be seen sitting upon the house-tops or telegraph-posts in the immediate vicinity of man, or perching fearlessly on the backs of the sheep as they wander about the fields and pastures. Some few species seek for food during the night, and carry on the chase in parties, which assemble on a favourite tree shortly after sunset; others, again, are active throughout the entire day, and though they do not hunt for prey after evening has closed in, may frequently be heard uttering their loud, harsh, monotonous cry should the night be fine and moonlit. During the breeding season each pair lives entirely apart from the rest, and permits no intruder to approach the nest.

We learn from Le Vaillant, Blyth, and others, that the Drongos are in many respects highly endowed, their instincts acute, their various senses well developed, and their movements through the air distinguished by great lightness and activity. So acute is their vision that, like the Swallow, they dart upon a flying insect from a considerable distance with a rapidity that renders escape almost impossible, and, as we have said, readily destroy their game even in the twilight. Except when engaged in seeking food, they rarely come to the ground; indeed, they seem to have considerable difficulty in using their delicate feet, even whilst in the trees, merely employing them as a means of clinging to the branches, and appearing quite incapable of hopping from one twig to another with anything like a sprightly motion. Such acts as bathing or drinking are carried on, as in the case of the Swallow, whilst the birds are upon the wing. All the members of this group are lively, noisy, and active. They exhibit the utmost courage in defending their mates and nestlings from danger, several individuals often combining together to drive away a common foe. They constantly attack Owls with great spirit, and Gurney tells us that they frequently endeavour to battle with the larger birds of prey. So violent are they during the season for choosing a mate, that Jerdon mentions having seen four or five of these desperate rivals rolling together upon the ground, as they fought in a paroxysm of rage and jealousy. All the various tribes of Drongos appear to subsist exclusively upon insects, more particularly upon bees and wasps; some large species also devour grasshoppers, dragon-flies, and butterflies, but, like their smaller brethren, prefer such insects as are furnished with stings, thus often rendering themselves extremely troublesome to the owners of bees. At the Cape of Good Hope they are known under the name of "Bee-eaters." Le Vaillant tells us that they seem to know exactly at what hour the heavily-laden insects return to their hives, and adroitly relieve them of their burdens, strewing the ground with the wings and bodies of the victims. We learn from Gurney that they are often attracted by the smoke from the conflagrations that

occasionally burst forth upon the arid plains of their native lands, for they know well that the devouring flames will drive forth a host of insects, and thus afford a rich and abundant supply of food. Philipps mentions an amusing instance of the cunning displayed by some of these birds whilst engaged in the pursuit of a meal. Upon one occasion, he tells us, he saw a locust closely pursued by a bird that was almost near enough to seize it, when an observant Drongo, having espied the tempting morsel, and finding it impossible to reach the spot in time, suddenly uttered the cry of terror usually employed to signal the approach of a Hawk; the ruse succeeded; the other bird instantly darted away to seek safe shelter, leaving the wily Drongo in undisturbed possession of the coveted booty.

The season of the year at which the incubation of these birds takes place is somewhat uncertain, and naturalists differ very considerably in their opinions on this point. According to our own observations and experience, they breed but once in the year. The nest, like that of the Pirol, is suspended between two branches at some distance from the ground, and so placed as to be fully exposed to all the changes of wind and weather; nevertheless, the exterior is very carelessly formed of twigs and fibres, and has no lining except at most a few coarse hairs. The eggs, three or four in number, have a white or reddish white shell, spotted with brown or red. Many species of the Drongo are caught and reared; the Bee-eater in particular is very commonly seen in the houses in Calcutta and other Indian cities. Blyth tells us that it is readily tamed, and soon becomes a most amusing companion, from the power it possesses of imitating not only the voices of other birds, which it does so exactly as to deceive their mates, but also any sound it hears.

The SWALLOW SHRIKES (*Artami*) constitute a family of strangely-formed birds, that inhabit New Holland, India, and the Malay Islands. Their muscular bodies are furnished with very long wings, in which the second quill is longer than the rest. Their short or moderate-sized tails are either quite straight or slightly incised at the extremity. The beak is short, almost conical, rounded at the sides, the upper mandible slightly bent at the tip, and incised at the margins. The feet are strong, with short tarsi and toes, the latter armed with sharp and very hooked claws. The plumage is thick, and of a dusky hue.

THE WOOD SWALLOW SHRIKE.

The WOOD SWALLOW SHRIKE (*Artamus sordidus*) is of a reddish grey upon the body; the tail and wings are dark blueish black, the third and fourth quill being edged with white upon the outer web. The tail-feathers, with the exception of the two in the centre, are broadly tipped with white. The eye is dark brown, the beak blue at its base and black at its tip; the feet are greyish white. The female is smaller than her mate, and presents a spotted appearance upon the back, the feathers on that part having a dirty white streak upon their shafts. The colour of the surface of the body is a mixture of white and brown. This bird is about six inches long and thirteen and a half broad.

The various species of Swallow Shrike, though differing slightly in some of their habits and in their mode of life, still bear so strong a family likeness to each other as will permit us to describe them collectively. All prefer woodland districts, and usually select localities in which their favourite trees abound. One species in particular is called by the natives the Palmyra Swallow, from the fact that it always seeks the shelter of the Palmyra palm. Such members of the family as inhabit Java select trees growing in open tracts, covered with short grass and brushwood; one of their favourite trees is then chosen as a sleeping-place or gathering-point, and from thence they fly over the surrounding country in search of food. Jerdon tells us that the fancy of the Swallow Shrike

for certain trees is so strong that where these grow it is often found living at an altitude of 4,000 feet above the level of the sea. It is only in the air that these birds exhibit their full powers; and as they glide along, with outspread but almost motionless wings, their movements resemble those of some of the Raptors. Other species, on the contrary, exhibit all the rapidity and free evolution of the True Swallow, as they soar aloft or sink rapidly to the earth in pursuit of their tiny aerial victims. They but rarely descend to the ground, as their progress on foot is accomplished with some difficulty. Shortly after the breeding season enormous parties of Swallow Shrikes congregate upon the trees, where they live in the utmost harmony, each one satisfying its own wants, and carrying on the business of the day without either molesting or rendering assistance to its companions. A tree thus occupied is as full of life and bustle as a beehive, every part of its foliage affording a perch to one of these hungry and active birds, whose sharp eyes enable them instantly to detect and dart upon a passing insect, after which process they at once return to their former position on the tree. Gould tells us that these large flocks may often be seen hovering over a sheet of water, and literally darkening its surface by their numbers, as they dart about amidst the tempting hosts of insects that abound in such localities. We must not omit to mention one very striking peculiarity of the Wood Swallows. Gilbert tells us he has seen swarms of these birds, as large as a bushel measure, hanging like bees in large clusters from the branches of the trees. "This bird," says Gould, "besides being the commonest species of the genus, is a great favourite with the Australians, not only on account of its singular and pleasing actions, but by its often taking up its abode and incubating near the houses, particularly such as are surrounded by paddocks and open pasture-land, skirted by large trees. It was in such situations as these I first had the opportunity of observing this species; it is there very numerous in all the cleared estates on the south side of the Derwent, about eight or ten being seen on a single tree, crowding against one another on the same dead branch, but never in such numbers as to deserve the appellation of flocks. Each bird appeared to act independently of the other, each, as the desire for food prompted it, sallying forth from the branch to capture a passing insect, or to soar around the tree and return again to the same spot. On alighting it repeatedly throws one wing out at a time, and spreads its tail obliquely, previous to settling. At other times a few were seen perched on the fence surrounding the paddock, on which they frequently descended like Starlings, in search of coleoptera and other insects. It is not, however, in this state of comparative quiescence that this graceful bird is seen to best advantage, neither is it at that state of existence for which its form is especially adapted; for though its structure is more equally suited for terrestrial, arboreal, and aerial habits than any other species I have examined, yet the form of the wings point out the air as its peculiar province. Here it is that when engaged in pursuit of the insects which the warm weather has enticed from their lurking-places among the foliage to sport in higher regions, this beautiful species in its aerial flights displays its greatest beauty, whilst soaring above in a variety of easy positions, with its white-tipped tail outspread."

The voice of these birds resembles the call-note of the Swallow, but is somewhat harsher and more monotonous. Some are stationary, while others wander from one place to another as soon as the period of incubation is over. The Wood Swallow makes its appearance in Van Dieman's Land in October, at the commencement of the Australian summer; and after rearing two broods returns again to more northern latitudes. The nests are built in a great variety of situations. Gould found one in a thickly-foliaged bush close to the ground, another placed in the fork of a bare branch, and others under the loose bark of a large tree; they are also frequently placed under the roofs of the settlers' houses; and one species in particular prefers to avoid all labour by taking possession of the deserted nests of other birds. Their own nests are usually neatly formed of delicate twigs, woven together, and lined with fine fibrous roots. The four eggs that constitute a brood are generally of a dirty white,

spotted and streaked with reddish brown. Bernstein tells us that the species inhabiting Java build amid the parasitic plants that cover their favourite palms, or upon the leaves of the tree itself, forming their little abodes of grass, moss, fibres, and small leaves, carelessly arranged, but strongly lined with soft and elastic materials. The Indian species, according to Jerdon, makes a bed of feathers inside its nest. Many of the members of this family remain in company even during the breeding season, and build in close proximity to each other. It is still uncertain whether the male bird assists in the cares of incubation, but both parents tend their young with great care, and rear them exclusively upon insect diet.

The FLY-CATCHERS, according to Linnæus, comprise a large number of small singing birds, distinguished by their broad, flat beaks. These have again been divided into a variety of families, amongst which the following stands first upon our list as forming a connecting link between the Fly-catchers and the Shrikes properly so-called.

The KING or TYRANT SHRIKES (*Tyranni*) constitute a family of American birds, having small but powerful bodies, and long, pointed wings, which when closed extend half-way down the tail. The second and third quills exceed the rest in length. The large broad tail is either excised or rounded at its extremity; the legs are strong, the tarsi high, and the toes muscular; the straight and slightly conical beak terminates in a hook, and is surrounded with bristles at its base. The thick soft plumage is usually grey upon the back, and white or yellow upon the under parts of the body. The Tyrant Shrikes are found extensively throughout South America, and are especially numerous in the warmest latitudes of that continent.

THE TRUE TYRANT SHRIKE, KING BIRD, OR TYRANT FLY-CATCHER.

The TRUE TYRANT SHRIKE, KING BIRD, OR TYRANT FLY-CATCHER (*Tyrannus intrepidus*), as the most noted member of this family is called, is about eight inches long and fourteen broad. The soft and brilliant plumage of this species is prolonged into a crest at the top of the head. The entire back is of a deep blueish grey, darkest upon the head, the feathers that form the crest being edged with bright red and yellow; the under side is greyish white, tinted with a deeper shade on the breast. The throat and neck are pure white, the quills and tail brownish black, the latter tipped with white, as are the wing-covers. The eye is dark brown, the beak black, the feet greyish blue. In the plumage of the female all these colours are much more dusky and indistinct than in that of her mate.

According to Audubon, the Tyrant Shrike is one of the most attractive birds that visit the United States during the summer months. It appears in Louisiana about the middle of March, and occasionally remains until the middle of September, but the flocks for the most part proceed north before that season, and spread themselves over every part of the country, filling the air with their quivering shrill cry, as they explore the orchards, fields, or gardens, and fearlessly approach the dwelling-houses of mankind. As the breeding season draws near, they may be seen flying merrily about at some distance from the ground, in search of a convenient spot for building, the male constantly uttering his shrill note, and keeping quite close to his mate. The nest is formed of bits of cotton, wool, tow, or similar materials, and is usually of considerable size; the interior is neatly and thickly lined with fibres and horsehair; the four or six eggs have a reddish white shell, irregularly marked with brown streaks. No sooner is the brood laid than the male bird begins to exhibit the utmost courage and devotion in tending and protecting his partner. The entire day is occupied in feeding and entertaining her, as he perches close beside her on a twig, displaying his glowing crest and white breast in all its beauty to her admiring eyes. Should an enemy or rival approach, he

darts furiously down and chases the intruder to a distance, sometimes as far as a mile from the nest, and then returns rapidly to his little family. So bold and fearless is the Tyrant Shrike upon these occasions, that even Falcons scarcely venture to approach its nest; and the cats of the neighbourhood, well knowing the reception they would meet with, carefully avoid trespassing within the domains of the intrepid father.

"At this period," says Wilson, "the extreme affection of the Tyrant Shrike for his mate and young makes him suspicious of every bird that happens to pass near his residence, so that he attacks every intruder without discrimination. In the months of May, June, and part of July his life is one continued scene of broils and battles, in which, however, he generally comes off conqueror. Hawks, Crows, and Eagles all equally dread an encounter with this dauntless little champion, who, as soon as he sees one of the last approaching, launches into the air to meet him, and darts down on to his back, sometimes fixing there, to the great annoyance of the king of birds, who, if no convenient retreat be near, endeavours by various evolutions to rid himself of his merciless adversary. But the Tyrant Fly-catcher is not so easily dismounted; he teases the Eagle incessantly, charges upon him right and left, and remounts into the air, that he may descend on his enemy's back with greater force, all the while keeping up a shrill and rapid twittering, and continuing the attack sometimes for more than a mile, until he is relieved by some other of his tribe equally eager for the contest."

The Purple Swallow alone seems capable of contesting the field with this courageous opponent, and resisting its attacks. Wilson mentions having seen the Tyrant Shrike also greatly irritated by his vain efforts to get rid of the Red-headed Woodpecker, the latter dodging him round a rail, and appearing highly amused at the impotent rage of his assailant.

About August the voices of these birds are far more rarely heard, and they employ their time in picking the worms and insects from the furrows in the fields, or in gliding over the water in pursuit of flies. Like the Swallow, they drink and bathe whilst on the wing, invariably perching upon a neighbouring tree, the better to dry their plumage. The Tyrant Shrikes quit the United States before any other of the feathered summer visitors, and prosecute their migrations by night as well as by day, flying alternately with rapidly repeated strokes of the pinions, and a smooth, gliding motion, that is apparently produced without the slightest effort. The flesh of this species is delicate, and much esteemed in Louisiana. A Tyrant Shrike kept for many months by Nuttall always swallowed berries whole; grasshoppers, if too large to be so disposed of, were pounded and broken on the floor of his cage, as the bird held them in his beak. To manage the larger beetles was not so easy; these he struck repeatedly against the ground, and then turned from side to side, by throwing them dexterously into the air, after the manner of the Toucan; the insect being uniformly caught reversed as it descended, with the agility of a practised cup and ball player. After the beetle was swallowed, he remained perfectly still for some time, in order to digest his meal, tasting it distinctly some time after it entered the stomach, as was obvious from the ruminating motion of his mandible. When the soluble portion had been extracted, large pellets of the indigestible legs, wings, and shells were brought up again in half an hour's time, and ejected from the mouth after the manner of Hawks and Owls. This bird, we are further told, had the sagacity to retire under the shelter of a depending bed-quilt in the apartment about which he was allowed to run at large, if the weather was unusually cold.

THE BENTÉVI.

The BENTÉVI (*Saurophagus sulphuratus*), a well-known species, resident in Brazil, is recognisable by its comparatively long wings and slightly incised tail. Its legs are powerful, tarsi high, toes long, and armed with sickle-shaped claws; the beak, which is higher than it is broad, and terminates in a

hook, is of a conical shape, and equals the head in length; its culmen is slightly rounded, and its base surrounded with bristles. These latter are particularly numerous in the region of the cheek-stripes. The length of this species is five and its breadth ten inches; the tail measures three inches. Upon the upper part of the body the plumage is of a greenish brown; the forehead and eyebrows white; the crest-like feathers upon the crown of the head are of a brimstone-yellow; the sides of the head, the bridles, and cheeks black; the wing-covers, tail-feathers, and quills are broadly edged with rust-red; the throat and fore part of the neck are white; the breast, belly, rump, and legs sulphur-yellow. In the plumage of the young the top of the head is entirely black; the wing and tail-feathers are broadly edged with rust-red; and all the colours paler than in those of the adult



THE TRUE TYRANT SHRIKE, KING BIRD, OR TYRANT FLY-CATCHER (*Tyrannus intrepidus*).

birds. The Bentevis are extensively met with throughout South America, particularly in well-wooded pasture-land or meadows; indeed, their loud, penetrating voices may literally be heard from every tree. We learn from Schomburghk that though they subsist principally upon insects, they also devour the nestlings of other species, and frequently visit the houses of the inhabitants in order to pilfer scraps of the meat hung out to dry. So bold are they that it is not uncommon to see them picking up their insect prey from under the very feet of the herds of cattle as they graze. Towards their feathered companions they exhibit unceasing animosity, chasing them and harrying them from spot to spot with loud spiteful cries, occasionally venturing to carry their pugnacious propensities so far as to attack some of the larger birds of prey. As the breeding season approaches, they become still more quarrelsome and noisy, until the air resounds with the voices of both the males and females as they chase each other in angry rivalry or sport among the branches, or so constantly utter their strange cry as to appear prompted by an anxious desire to outdo their companions, both in loudness and rapidity of utterance. This cry, from which the name of the species is derived, has been freely interpreted by the inhabitants of Monte Video and Buenos Ayres to mean, "*Bien-te-veo*," "I see you well," and in Guiana into, "*Qu'est ce que dit ?*"

The nest, which is large, thick, and ball-shaped, is artistically constructed of moss, leaves, grass, and feathers, and is entered by a small round aperture in the sides. The eggs, three or four in number, have a pale greenish shell, marked with a few black and greenish blue spots, which are most thickly strewn over the broad end. We learn from Azara that the Bentevi is readily tamed, and when caged will live on peaceful terms with its companions. The same authority mentions a peculiarity that he observed in one of these birds that he himself reared, namely, that it always seized the bits of flesh that were given to it in his beak, and struck them repeatedly against the ground, as though he supposed the morsels required killing before they could be eaten.

The FORK-TAILED TYRANTS (*Milvulus*) differ from the groups already described principally in the great length of their forked tails. Their bodies are slender, and they have short necks, broad heads, and long wings. Their large, strong beaks bulge slightly towards the sides, terminate in a decided hook, and are partially covered with bristles at the base; the feet are short; the toes of moderate size, armed with very sharp, compressed claws; the three first wing-quills, of which the second is the largest, are pointed at the tip. This latter peculiarity is particularly apparent in the male. The plumage is soft and elastic, but by no means thick.

THE SCISSOR BIRD.

The SCISSOR BIRD of the Brazilians (*Milvulus tyrannus*), though properly a native of Central America, is occasionally met with in the United States. The length of this elegant species is about fourteen inches, of which at least ten belong to the exterior tail-feathers, whilst those in the centre do not measure more than two and a half inches. Its head and cheeks are deep black, except at

the lower part of the crest, which is yellow; the back is ash-grey; the under side white; the quills, wing-covers, and rump are blackish brown, edged with grey; the outer web of the exterior tail-feathers is white along the whole of the upper half; the eye dark brown; the beak and feet are black.

We learn from Audubon and Nuttall that the Scissor Birds are frequently met with upon all the vast steppes of Central and Southern America, and are common in some districts. They are usually seen assembled in large parties upon low brushwood, and from thence fly down to seize their insect



THE SCISSOR BIRD (*Milvulus tyrannus*).

prey. At the appearance of dusk they retire to pass the night together upon a favourite tree. Whilst perched they seem to be of very indolent and quiet disposition, but whilst in flight their appearance is striking and remarkable, as they constantly open and close their long tails, after the fashion of a pair of scissors, during the whole time that they are upon the wing, a circumstance from which they derive their name. Insects constitute their principal fare, and these they capture in the same manner as other members of their family; they also pursue and devour many small birds, and, according to Nuttall, frequently consume berries. The nest, which is usually concealed in a thickly-foliaged bush, is open above, and formed of delicate twigs, snugly lined with a bed of fibres, wool, or feathers; the eggs are white, mottled with reddish brown, these markings being thickest at the broad end. As autumn draws to a close the Scissor Birds congregate with other species in large parties, previous to setting forth upon their migrations. Schomburghk tells us that such of these flocks as he observed leaving the country, settled upon the trees from about three to five o'clock in the afternoon, and remained there for the night, resuming their southern course at the first dawn of day.

THE ROYAL TYRANT.

The ROYAL TYRANT (*Megalophus regius*), so called from the tiara-like crescent that adorns its head, and its great beauty of plumage, has a slenderly-formed body and pointed wings, in which the third and fourth quills exceed the rest in length, the first and second being comparatively short; the tail is moderately long, and quite straight at its extremity; the beak, which is flat and spoon-shaped, terminates in a sharp hook; the feet are short; the toes, of which the two exterior are united at the base, are powerful, and armed with short blunt claws. The plumage is soft and downy, and upon the top of the head is prolonged into a broad flowing crest; at the base of the beak it is replaced by bristles; five very long bristles also decorate the cheek-stripes. The upper part of the body is of a beautiful light brown, while the entire under surface and tail are bright reddish yellow; the throat is whitish; the quills are deep brown or blackish, with a light edge upon the inner web; the wing-covers are tipped with pale yellow; the tiara is of a gorgeous flame-colour, or carmine-red, each feather having a black spot at its tip, surrounded in the male by a light yellow line. These spots gleam with a blue metallic lustre, and the crest extends as far as the nape; the eye is light brown, the upper mandible brown, the lower one light yellow; the feet are pale flesh-pink, and the long bristles black. In the young the plumage is almost entirely brown, mottled upon the breast, and spotted on the back; the crest is very small, and of an orange-yellow. The length of this species is six inches; the wing measures three and a half, and the tail two and a half inches.

The Royal Tyrant inhabits the primitive forests of Brazil and Guiana, where it frequents the most shady recesses, and leads a quiet and solitary life, usually preferring the tops of the trees. Notwithstanding the preference it shows for retired spots, it is frequently caught by the natives, on account of its great beauty. We learn from Burmeister that the capture of the male is rendered comparatively easy, by the fact that a brooding female has no sooner lost her mate than she consoles herself with another. The natives, who are aware of this peculiarity, when they find a pair shoot the male, and then wait patiently until his successor makes his appearance, when he is also killed. We have it on good authority that a female Royal Tyrant will in this manner take to herself as many as a dozen of these ill-fated partners. The eggs are oval, and have light violet shells, marked with brownish or blood-red spots, and streaked with the same shade at the narrow end. We have no account of the nest built by this species.

The STILTED FLY-CATCHERS (*Fluvicola*) constitute a group of South American birds differing in many particulars from the Tyrant Shrikes. The members of this group are recognisable

by their large, powerful bodies, and their long wings and tail, in the former of which the first quill is only a trifle shorter than the second. They have strong legs, high tarsi, and thick, sharp claws. Their large, high, and slender beak is of a conical form, and but very slightly bent at its extremity. Their thick plumage is heavy, and is composed of small feathers, presenting but a very slight development of down. The base of the beak is covered with stiff bristles, of which from three to five of still stiffer and larger size are scattered over the region of the cheek-stripes.

The Stilted Fly-catchers are frequently met with in the immediate neighbourhood of human habitations, and in such open plains as are almost entirely destitute of trees or bushes, near ponds, rivers, or even in marshy districts, everywhere subsisting upon insects, and carrying on the pursuit of their prey exactly in the same manner as the birds above described.

THE YIPERU, OR YETAPA.

The YIPERU, or YETAPA — Cunningham's Bush Shrike—(*Gubernates Yiperu*), a well-known member of this group, has a slender body, large wings, and very long, forked tail. Its beak is thick and broad at its base, the upper mandible considerably arched, and furnished with a strong, short hook at its extremity; the legs, though short, are powerful, the toes of moderate size, and armed with slightly-curved claws. The plumage is thick and soft, that of the wings and tail being unusually heavy. The back and under side of the body are grey, the wings and tail black, with a white patch at the shoulder, and a light red spot on the outer web of the large quills. The throat is white, separated from the grey breast by a reddish brown line, which extends as far as the eyes; the brow is of a whitish shade, the eye itself reddish brown, and the beak and feet black. The length of this species is fifteen inches, of which nine are included in the length of the exterior tail-feathers, whilst those in the centre are not more than two and a half inches long. The span of the wings is about fifteen inches.

We learn from Azara that the Yetapas principally frequent such plains as are only partially covered with brushwood or trees, and fly about in small parties, seeking for their insect food upon the ground. Their cry is monotonous but penetrating.

THE COCK-TAILED FLY-CATCHER.

The COCK-TAILED FLY-CATCHER (*Alcedrinus tricolor*)—the other member of this group which we have selected for description—is easily recognisable by its short, stiff tail, in which sometimes the two exterior and sometimes the centre feathers are of very peculiar appearance, owing to the very irregular development of the web. The thick conical beak terminates in a delicate hook, the legs are slender, the tarsi high, and the toes long. The wings are of moderate size and pointed, the third quill being longer than the rest; the first and second are much incised and narrow towards the tip. The plumage is soft, composed of small feathers, and the bristles on the cheek-stripes are unusually large. In the male bird the inner web of the very broad centre tail-feathers is much developed; the body is almost entirely black, the throat, belly, and shoulders being white. The plumage of the female and young is yellowish brown, except upon the throat, which is whitish, with various light markings, and the centre tail-feathers are no broader than those at the side; all have greyish brown eyes. The beak is of a dirty light brown, and the feet dark brown. The length of the Cock-tailed Fly-catcher is five and a half, and the tail about nine inches. The wing measures two and a half, and the tail two inches.

These birds inhabit all the plains of South America, and, according to Azara and D'Orbigny, perch throughout the entire day upon the high grass, from whence they rise to catch the insects as they pass, and then sink with outspread wings and tail to their former lurking-place; they rarely fly to

any distance, and often seem to move through the air in a backward direction. We are without particulars concerning the mode of breeding and nidification of this species.

The CATERPILLAR EATERS (*Campephagæ*) comprehend a number of birds inhabiting the East Indies and contiguous islands, as also Africa and New Holland. With their mode of life we are but little acquainted, beyond the fact that they associate in small parties, and seek their food almost exclusively amongst the foliage of trees and bushes. They consume great numbers of insects and their larvæ, and some few eat berries.

THE RED BIRD, OR GREAT PERICROCOTUS.

The RED BIRD, or GREAT PERICROCOTUS (*Pericrocotus speciosus*), the species we have selected as the representative of its family, is a magnificent creature, about nine inches long, and twelve inches and a half broad. The wings, in which the fourth and fifth quills are longer than the rest, measure four and a quarter and the tail four inches. The beak is short, broad at its base, and slightly curved. The tarsi are short, the feet delicate, and the claws much hooked. The plumage of the male is of a brilliant blueish black upon the back, quills, and centre tail-feathers; whilst the entire under side, a broad band across the wings (formed by a line of spots upon the outer quills), and the exterior tail-feathers are glowing scarlet. In the female, the brow, back, and upper tail-covers are greenish yellow; the quills dusky black, spotted with yellow; the centre tail-feathers tipped with deep yellow; the rest of the plumage is bright yellow, decorated with various dark markings. In both sexes the eye is brown, and the beak and feet black.

These very beautiful birds are met with extensively throughout the greater part of India, particularly in Calcutta, Assam, and Burmah; they are most numerous in such localities as are 3,000 or 4,000 feet above the level of the sea. Like most of their congeners, they are generally active and social, usually gleaning their insect food from amongst the buds and blossoms of their favourite trees, and only occasionally descending to the ground or seeking their prey upon the wing. Jerdon tells us that whilst the business of the day is going on the males and females separate from each other, each sex associating in small parties of four or five birds, and carrying on their work in the most lively manner, hopping and climbing briskly about among the foliage, and constantly uttering their cheerful and penetrating note. The nest of the Red Bird found by the writer to whom we have alluded, was constructed of moss and delicate fibres, and contained three white eggs, slightly spotted with brownish red. Radde mentions a grey species, inhabiting China, the Philippine Islands, and Eastern Siberia, and tells us that the flocks which he saw, each numbering some fifteen or twenty birds, tumbled noisily about near the tops of the trees, and filled the otherwise silent forests with their shrill chattering cry. On the first approach of danger, these lively parties at once united into large flocks, and sought refuge in the highest trees, preserving meanwhile such unbroken silence as to render their capture a work of great difficulty.

The FLY-SNAPPERS (*Myiagræ*), another family of these birds, inhabit the eastern hemisphere, and are recognisable by the slender formation of their body, moderate-sized wings, in which the fourth and fifth quills exceed the rest in length, and long tail; in the males of some species the web of the centre tail-feathers is much developed; the beak is broad and compressed, broad at its base, straight at the culmen, incised at its margins, and hooked at its extremity. The feet are short and weak; the plumage bright-coloured, and rich in texture. The base of the beak is surrounded with bristles. All the members of this family are unusually brisk and restless in their habits, and enliven their native forests by their gay plumage and cheerful notes.



THE PARADISE FLY-CATCHERS (*Tersiphone paradisca*).

The PARADISE FLY-CATCHERS, separated as a distinct group under the name of the *Terpsiphone*, comprise the most beautiful and striking species of the family, and are distinguished by the formation of their tail, which is very long and conical, the centre feathers in the male being double the length of those at the exterior.

THE PARADISE OR ROYAL FLY-SNAPPER.

The PARADISE OR ROYAL FLY-SNAPPER (*Terpsiphone paradisea*) is a magnificent species, two feet in length, if we include the centre tail-feathers, which measure fifteen and sixteen inches, whilst those at the side do not exceed five inches. The wing is four inches long. The coloration of the sexes differs considerably—in the old male the head, crest, neck, and breast are of a greenish black; the rest of the feathers are white, streaked here and there with black upon the shafts; the primary and secondary quills are black, tipped with white upon the inner and entirely white upon the outer web. The female, readily distinguished from her mate by the comparative shortness of the tail-feathers, is like the young male, of a glossy black upon the head, neck, and breast, and white upon the belly; the rest of the plumage being entirely nut-brown. The nestlings are ash-grey upon the throat, breast, sides, and upper part of the belly. All have deep brown eyes, bright blue beaks and eyelids, and lavender-blue feet. The Royal Fly-snapper inhabits the whole of India, from Ceylon to the Himalaya, where it is replaced by another species, and is usually found within the shelter of such forests as are not more than 2,000 feet above the sea. According to Jerdon, it occasionally ventures forth from its favourite retreats to investigate the surrounding country, but rarely makes its home amongst the brushwood or trees upon the open plains. Its flight is undulatory in its commencement, and very striking, owing to the strange effect presented by its long tail, as it waves and flutters through the air. This flowing tail is raised and spread with every appearance of delighted vanity by its beautiful owner, as it perches quietly in the branches, and glances sharply around in order to detect the approach of an insect, upon which it darts at once with great rapidity, and having secured it, returns to its lurking-place. Almost the entire day is spent in restlessly flitting about from branch to branch, and tree to tree, and constantly uttering its loud but not unpleasing cry. The nest is formed of moss and fibres, lined with hair and wool. This magnificent bird is usually to be seen perched upon a branch, and displaying to the utmost its beautiful plumage, as it alternately expands and closes its graceful crest and tail, in evident appreciation and enjoyment of its own beauty. Its flight, which is very rapid when occupied in chasing its rivals from the field, or pursuing its insect prey, changes into a hovering motion if the bird is under no excitement, and merely wishes to fly to a distant spot; at such times few more attractive sights can be witnessed than it presents as it thus slowly glides in a series of undulating lines through the air, its pure white tail upheld and streaming behind in such a manner as to form a flowing train. These long tail-feathers are only retained during the time that the bird wears its bridal attire, and are soon torn away by the foliage of the trees when the period of incubation is over. Unlike most of its congeners, the Paradise Fly-snapper is endowed with a gentle and sweet-toned cry. Le Vaillant describes a nest that he was informed had been built by one of these birds as being horn-shaped, about eight inches long, and the broadest part two and a half inches across. This little structure, which hung in the forked branches of the mimosa-tree, was most carefully constructed of fibres woven together, so as in its texture to resemble haircloth. The interior was without any warm lining.

The FANTAILS (*Rhipidura*) are a group of birds inhabiting Australia and the neighbouring islands; they are also occasionally to be met with in some parts of Asia. All the various species have slender bodies, long wings, of which the fourth and fifth quills exceed the rest in length, and

well-developed tails ; their tarsi are powerful, and of moderate length ; their beaks broad, curving gradually downwards to the slightly hooked extremity, and incised at the margins ; the region of the bill is covered with large bristles.

THE WAGTAIL FANTAIL.

The WAGTAIL FANTAIL (*Rhipidura motacilloides*), so called from its resemblance to the European Water Wagtail (*Motacilla*), is of a glossy greenish black upon the mantle, throat, and sides of the breast ; a narrow, yellowish white streak passes above the eyes ; and a triangular spot occupies the tips of the smaller wing-covers. The extremities of all the webs of the exterior tail-feathers and the entire under surface are pale yellowish white, the quills are brown, the eyes dark brown, the beak and feet black. Both sexes are alike in colour, and differ but slightly in size, their length being usually about five inches.

The Fantails are found extensively throughout Australia, where they frequent retired woodland districts, but are often seen in the immediate vicinity of men ; indeed, so extremely tame and social are they that they by no means confine their visits to orchards and gardens, but enter freely into the houses, in search of flies and other insects. Their flight is undulatory in its course, is seldom long sustained, and never rises above the tops of the trees. Should the birds desire to reach a distant spot, they usually descend to the ground, over the surface of which their powerful legs enable them to run with great rapidity. The song of this species, though loud and shrill, is by no means unpleasing, and, should the moon be bright, is often heard after nightfall. The period of incubation commences in September, that is, in the early Australian spring, and each pair breeds twice, or, if the season be fine, thrice within the year. Their deep, cup-shaped nest is most artistically constructed of dry grass, bits of bark and roots, overlaid with spiders' webs, and lined with a soft bed of delicate fibres, grass, and feathers. Such trees as overhang the water are generally preferred for building purposes. The nest is placed very near the ground, and furnished with a strange-looking, long appendage, which is, no doubt, intended to act as a sort of balance ; it is frequently placed in situations that are fully exposed to the violence of the sea and wind, but with such care are the materials for these beautiful structures selected to harmonise with the colour of the branch on which they are placed, that their discovery is always a work of difficulty. The brood consists of two or three dirty greenish white eggs, marked with black or reddish brown spots and streaks, either at the broad end or around the centre. During the whole time that the parents are occupied in the education of their young they exhibit the utmost courage and anxiety to prevent the approach of an enemy, and if alarmed express their uneasiness by a peculiar call somewhat resembling the sound produced by a child's rattle.

The TRUE FLY-CATCHERS (*Muscicapæ*) constitute a family of birds chiefly confined to Europe and Asia, and though unadorned with the flowing tails and glowing tints possessed by some of their near relations already described, comprise many beautiful species. All have elongate bodies, short necks, and broad heads. Their wings (in which the third quill exceeds the rest in length) are long, and their tails of moderate size, either incised or graduated at the extremity. Their short, strong, compressed beaks are broad at the base, and terminate in a slight hook ; the upper mandible is furnished with a sharp ridge at its culmen, and the base of the bill is surrounded with bristles. Their soft lax plumage varies considerably in its coloration, according to the age and sex of the bird, and the young are easily recognisable by their spotted appearance.

Like most of the groups above described, all the members of this family frequent trees in preference to bushes, and rarely seek their food upon the ground. Should the day be rainy, they content themselves with berries ; but in fine weather pass their time in actively giving chase to every

unlucky insect that chances to attract their keen little eyes as they perch quietly among the branches, and, having secured the victim, they at once return to their lurking-place. During the period of incubation, the males utter a monotonous cry; but at other seasons their voices are very rarely heard. The nest built by the Fly-catchers is carelessly constructed, but furnished with a warm bed for the reception of the young, and is placed either in holes of trees or upon a branch, quite close to the stem. Both parents assist in hatching the four or five eggs that compose a brood, and tend the young until the season for migrating approaches, when they leave their native lands for more southern regions, often reaching Central Africa in the course of their winter journeyings.

THE GREY OR SPOTTED FLY-CATCHER.

The GREY OR SPOTTED FLY-CATCHER (*Butalis grisola*) is distinguishable from its congeners by the following characteristics:—The plumage of the male is deep grey upon all the upper part of the body, each feather having a black shaft. The crown of the head is blackish grey, lightly spotted; and the wing-feathers are tipped with light grey, thus forming an indistinct border to the pinions. The entire under side is dirty white, shaded with reddish yellow upon the sides, and streaked with faint, dark grey, oval patches on the breast and sides of the throat. The eye is brown, the beak and feet black; the colours in the plumage of the female are paler. The back of the young is whitish, spotted with grey, and marked with brown and reddish yellow; the under side is of a whitish shade, spotted with grey upon the breast and throat. The male bird is five inches and a half long and nine and a half broad; the wing measures about three and the tail three and a half inches; the female is only a few lines smaller than her mate. These lively, restless birds inhabit all the countries of Europe except its extreme north, and are especially numerous in the southern provinces, making their appearance in pairs at the end of April or beginning of May; in England, about the 20th of May, when they at once commence breeding. They leave for warmer latitudes early in the autumn. During their winter migrations they visit the interior of Africa, and we ourselves have seen large numbers sojourning for a time in the forests near the Blue Nile. In Europe they seem to have no preference for any particular locality, but inhabit highland or lowland regions, unfrequented forest tracts, or the gardens and orchards of a populous district, with equal impartiality; trees in the immediate vicinity of water, however, afford them the retreats they most delight in, the sheltering branches enabling them to dart down unobserved amongst the swarms of insects that disport themselves over the surface of lakes and streams. Whilst thus engaged in watching for prey, the Fly-catcher waves its tail to and fro, as its keen eye selects the most tempting morsel, which is instantly swooped upon and seized with a noisy snap of the beak, the bird returning at once to its perch. Should its victim be too large to be swallowed entire, its body is crushed against a tree in such a manner as to tear off the wings and legs, and thus render it manageable. The bird thus disposes of flies, gnats, butterflies, and dragon-flies, always catching them upon the wing. When the coldness of the season compels it to subsist upon berries, these latter are also obtained whilst in flight, by sweeping down towards the tree and snatching them from the stalk *en passant*, without tarrying for a moment to rest on the branch. The delicate feet of this species do not permit it to hop from bough to bough, and its movements upon the ground, to which it rarely descends, are feeble and awkward; but its flight, on the contrary, is rapid, and extremely graceful, its course through the air being diversified from time to time by a fluttering motion, produced by alternately completely closing and broadly spreading its pinions and tail.

The voice of the Fly-catcher may be described as a gentle, twittering chatter. The call-note is monotonous, and in moments of terror or excitement usually accompanied by violent motion of the wings. Solitary individuals are seldom seen, and only during such time as the young are

still under parental guidance are they met with in parties; at other times they are found in pairs, that keep apart from each other, and exhibit most determined pertinacity in driving off all intruders from the haunts they have appropriated. The nests are built in a great variety of situations—in holes of rocks, walls, or roofs, in hollow trunks of trees, or on a branch quite close against the main stem; brushwood or low clumps of old willows, however, afford the seclusion these birds prefer. Green moss, fine dry fibres, and similar materials are usually employed in constructing the somewhat carelessly-formed domicile, which is warmly lined with horsehair, wool, and feathers. The female alone undertakes the whole labour of building. Instances are recorded of the nest of this species being found in very odd situations. We have heard of one built in the head of a garden-rake that had been left standing against a wall; another was seen by Mr. Atkinson, on the angle of a lamp-post in one of the streets of London; and a third, mentioned by both Jesse and Yarrell, occupied a still more remarkable position—namely, within the crown of one of the lamps in Portland Place, in London.

Should a couple not be disturbed, they produce but one brood of four or five eggs in the year; these are laid in June, and have a blueish or blueish green shell, very variously marked with light rust-red. Both parents assist in the work of incubation, and hatch the eggs within a fortnight. The young grow rapidly, but remain for a long time under the care of their parents.

A curious circumstance concerning this bird is recorded by Thomas Andrew Knight, Esq., President of the Horticultural Society, namely, that—"A Fly-catcher that had built in a stove in one of the green-houses in the Society's gardens was always observed to leave its nest when the thermometer stood at 72° , and resumed its place upon the eggs as soon as the temperature fell again below that point."

Naumann mentions a little incident that came under his notice, that will illustrate the utility of these birds in the great scheme of Nature. "A boy in our village," he says, "succeeded in obtaining a Fly-catcher's nest before the young were fledged, and placed the little family, including the mother, in a room in his house. No sooner had the parent bird ascertained that all attempts to escape were hopeless, than she at once set to work to feed her young with the flies that were winging their flight about the chamber. Of course before long all these were consumed, and the boy was compelled to carry his prize to a neighbour's cottage, in order that they might procure a supply of food. In this manner the useful family went the round of the village, clearing the houses of vast numbers of troublesome guests. My turn came last, and in gratitude for the benefit received I succeeded in obtaining liberty for both mother and nestlings."

Despite the immense services rendered by these birds, they and their eggs are constantly destroyed by boys and men, who are too ignorant or unthinking to know and appreciate the benefits they confer upon us; large numbers also fall victims to the attacks of cats, martens, rats, and mice. The Fly-catcher is easily reared, and soon so completely adapts itself to captivity that it may be allowed to fly at large about a room. If provided with a small box filled with sand, in which an upright stick is placed with another laid across, it prefers perching upon the latter to any other situation, and never in any way injures the furniture of the apartment. One of these birds kept by ourselves was fed during several successive winters upon rolls soaked in milk, and finely-minced meat; upon this diet it became remarkably tame, and, although liberated every spring, regularly returned to us at the end of the warm season.

The MOURNING FLY-CATCHERS (*Muscicapa*) differ from those members of their family already described in the shortness of their beak, which is almost triangular, in the inferior size of their wings, and in the diversity of plumage that distinguishes the sexes.

THE BLACK-CAPPED OR PIED FLY-CATCHER.

The BLACK-CAPPED OR PIED FLY-CATCHER (*Muscicapa atricapilla*) is five inches long, and about eight inches and a half broad. The male bird is deep grey, more or less clearly marked with black upon the entire upper side; the brow, lower parts of the body, and a patch upon the wings are white. The female is greyish brown above, and dirty white beneath; her anterior wing-quills being blackish brown, whilst the undermost are bordered with white; the three exterior tail-feathers are white upon the outer web. The young are similar to the mother. Both sexes have dark brown eyes, and black beaks and feet. This species is particularly numerous in some parts of Germany, and usually makes its appearance in England about April, leaving for more southern latitudes in September, but it is by no means common in this country. A nest found by Mr. Heysham, of Carlisle, contained eight eggs, one of which lay at the bottom, whilst the rest were placed perpendicularly, in regular order round the little apartment, the narrow end turned upwards and supported against the sides of the wall.

THE COLLARED OR WHITE-NECKED FLY-CATCHER.

The COLLARED OR WHITE-NECKED FLY-CATCHER (*Muscicapa albicollis*) is frequently mistaken for the preceding species, the females especially bearing a most deceptive resemblance to each other. The adult male, however, is recognisable by a white ring around the throat, and the female is without the light edging to the tail-feathers. Both these Mourning Fly-catchers inhabit Europe, the latter being numerously met with in its most southern countries, but comparatively rarely seen in the more northern portions; whilst the former frequents every part of the European continent, making its appearance at the end of April, and leaving again about September: their migrations often extend as far as Central Africa, and are usually carried on at night: the males are always the first to leave, and generally return to Europe before their mates. Both species are extremely lively, passing the entire day, when the weather is fine, in pursuing their prey, or chasing each other in sportive evolutions through the air, or hopping nimbly from twig to twig, meanwhile uttering their twittering call-note. Even when perched, their little bodies are kept in constant motion by the incessant agitation of their wings and tail. The song of these birds is generally to be heard long before sunrise, when all their feathered companions are still asleep; and we are therefore inclined to listen to their voices with a pleasure and attention, occasioned rather by the circumstances under which their penetrating and somewhat melancholy notes are uttered, than from any intrinsic merits of their music; during the breeding season, however, the male sings agreeably and energetically throughout the day. Both these species of Fly-catchers subsist upon the same kinds of insects, and, should their ordinary food fall short, have recourse to various berries, or they glean small beetles from the leaves of the trees. Like all birds that live in a state of constant activity, they are extremely voracious, and devour enormous quantities of grasshoppers, horse-flies, butterflies, gnats, and other insects, always seizing their prey upon the wing, even should the victim be creeping on a leaf, or running over the ground. The nests are usually made in hollow trees, and are padded with a layer of moss and fibres, lined with feathers, wool, and hair. Should a hollow tree not be attainable, the nest is built upon some branch quite close to the trunk. The brood consists of five or six delicate-shelled, pale greenish eggs; these are incubated by both parents, and are hatched within a fortnight after they are laid. In three weeks' time the nestlings are fledged, but they remain for a considerably longer period under parental care and guidance. In some countries boxes are often placed in gardens in order to attract the breeding pairs; and so tame do the families thus reared become, that they will even allow the boxes to be moved from one place to another, without either leaving them or testifying any uneasiness. When caged, they soon attach themselves to those who

feed them, and will take flies from the hand : Nightingales' food suits them best when they are subjected to a life of confinement. Large numbers of these useful birds are caught by the Italians, in a variety of nets and snares, during the time of their autumn migrations, and hundreds of them are exposed for sale as dainty morsels in every market-place. In ancient times Fly-catchers were sent from Cyprus to Italy prepared in spice and vinegar, and closely packed in pots or small casks.

THE DWARF FLY-CATCHER.

The DWARF FLY-CATCHER (*Erythrostera parva*) has been selected as the representative of a distinct group, on account of its comparatively powerful beak and high tarsi. The length of this bird is about five and its breadth about eight inches. Its plumage is so diversified as to have given rise to many errors concerning the number of species. During the spring the upper part of the body of the adult male is of brownish grey, deepest in shade towards the head ; the feathers of the larger wing-covers and the posterior quills have a light edge ; the chin, throat, lower and upper breast are rust-red ; the rest of the under side dirty white ; the primary quills are of a blackish brown-grey, enlivened by a light border. In the young male the reddish brown upon the throat is paler than in the adult bird, and all the colours in the plumage of the female are fainter and greyer than in that of her mate. All have dark brown eyes, and black beaks and feet.

The Dwarf Fly-catcher is found extensively throughout Poland and almost the whole of Germany, where it seems to prefer the shelter of the beech-woods, living principally in the summits of lofty trees, and rarely approaching the vicinity of man or descending to the ground. Its call is generally a loud piping note ; but the song varies so considerably in different individuals as to be sometimes almost unrecognisable. The nest is placed either in a hole or upon the branch of a tree, at some distance from the trunk : it is formed of slender blades of grass vegetable fibres, green moss, or similar materials, lined with wool and hair. The brood consists of four or five eggs, of a greenish white, marked indistinctly with light rust-red patches. Both parents assist in the work of incubation, and exhibit extraordinary attachment to their young ; the male bird, however, devotes himself principally to tending and entertaining his mate, whilst she undertakes the main part of the building operations. No sooner are the nestlings capable of supporting themselves than they leave their parents, and retire into the depths of the forests, where they remain until their winter migrations. From the day when the parent birds are separated from their families, their nature seems to undergo a complete change, and they at once assume a quiet, inactive deportment, that strongly contrasts with their previously sportive, busy habits. Count Gourcy, who reared many of these Dwarf Fly-catchers, tells us that they were readily tamed, and soon learnt to know him, welcoming his approach to the cage by flapping their wings and waving their tails above their heads. They bathed freely, and devoured insects in large quantities, eagerly snapping at any fly that was unlucky enough to approach too near.

The SILK-TAILS (*Bombycillæ*) possess a compact body, short neck, and moderate-sized head. Their wing, in which the first and second quills are longer than the rest, is of medium length, and pointed at the extremity ; the tail is short, and composed of twelve feathers ; the straight, short beak is broad, much compressed at its base, but raised and narrow at its tip, the upper mandible being longer and broader than the lower one, arched at its culmen, and slightly hooked at its extremity, which is visibly incised. The feet are short and powerful, and the exterior and centre toe connected by a fold of skin. The soft silky plumage upon the head is prolonged into a crest, and some of the wing and tail feathers terminate in horn-like laminæ. The coloration differs but little in the two sexes.

THE EUROPEAN OR COMMON SILK-TAIL.

The EUROPEAN OR COMMON SILK-TAIL, BOHEMIAN CHATTERER, or WAX-WING (*Bombycilla garrula*) is eight inches long and thirteen and a half broad. The plumage is almost entirely reddish grey, darkest upon the back, and shading into greyish white beneath; the brow and rump are reddish brown; the chin, throat, bridles, and a streak over the eyes black; the primary quills are greyish black, spotted with gold on the tip of the outer, and edged with white upon the inner web; the secondaries are furnished with parchment-like or horny plates at their extremities, which are bright red; the tail-feathers are blackish at their lower portion, light yellow towards their extremities, and terminate in horny plates, resembling those upon the secondary quills. In the female the colours are fainter, and the horny appendages much less developed than in the plumage of her mate. The

THE COLLARED OR WHITE-NECKED FLY-CATCHER (*Muscicapa albicollis*).

young are almost entirely dark brown, with light edges to many of the feathers; the brows and a stripe that passes from the eyes to the back of the head, a streak across the light reddish yellow throat and the rump are whitish, while the lower tail-covers are of a dusky rust-red.

The Common Silk-tail is an inhabitant both of Northern Europe and of North America, but is found only occasionally in some parts of Asia, being replaced in that continent by its Japanese congener, the *Bombycilla phenicoptera*; while in America the CEDAR BIRD (*Bombycilla cedrorum*) is more numerous met with. In the northern portions of Europe, birch and pine forests constitute its favourite retreats, and these it seldom quits, except when driven by unusual severity of weather or by heavy falls of snow to seek refuge in more southern provinces. Even in Russia, Poland, and Southern Scandinavia it is constantly to be seen throughout the entire winter; indeed, so rarely does it wander to more southern latitudes that in Germany it is popularly supposed to make its appearance once in seven years. On the occasion of these rare migrations, the Silk-tails keep together in large flocks, and remain in any place that affords them suitable food until the supply is exhausted. Like most

other members of the feathered creation inhabiting extreme climates, these birds are heavy and indolent, rarely exerting themselves except to satisfy their hunger, and appearing unwilling to move even to a short distance from their usual haunts. With their companions they live in uninterrupted harmony, and during their migrations testify no fear of man, frequently coming down to seek for food in the villages and towns they pass over, without apparently regarding the noisy bustle of the streets. Even during their winter journeyings, they settle frequently, and pass the entire day indolently perching in crowds upon the trees, remaining almost motionless for some hours together, only descending in the morning and evening to procure berries, in search of which they climb from branch to branch with considerable dexterity. Their flight is light and graceful, being effected by very rapid strokes of the wings. Upon the ground they move with difficulty, and rarely alight upon



THE SILK-TAIL, BOHEMIAN CHATTERER, OR WAX-WING (*Bombycilla garrula*).

its surface, except when in search of water. Their call-note is a hissing, twittering sound, very similar to that produced by blowing down the barrel of a key. The song, though monotonous and gentle, is uttered by both sexes with so much energy and expression as to produce a pleasing effect, and may be generally heard throughout the entire year. Insects unquestionably constitute the principal food of the Silk-tails during the warmer months, but in winter they subsist mainly upon various kinds of berries. So voracious is this species, that, according to Naumann, it will devour an amount of food equal to the weight of its own body in the course of twenty-four hours. When caged, it sits all day long close to its eating-trough, alternately gorging, digesting, and sleeping, without intermission. Until the last few years we were entirely without particulars as to the incubation of the Silk-tail, and have to thank Wolley for the first account of the nest and eggs. This gentleman, who visited Lapland in 1857, determined not to return to England until he had procured the long-desired treasure, and, after great trouble and expense, succeeded in collecting no fewer than

600 eggs. All the nests discovered were deeply ensconced among the boughs of pine-trees, at no great height from the ground ; their walls were principally formed of dry twigs and scraps from the surrounding branches ; the central cavity was wide, deep, and lined with blades of grass and feathers. The brood consists of from four to seven, but usually of five eggs, which are laid about the middle of June ; the shell is blueish or purplish white, sparsely sprinkled with brown, black, or violet spots and streaks, some of which take the form of a wreath at the broad end (see Fig. 25, Coloured Plate IV.) The Silk-tail readily accustoms itself to life in a cage, and in some instances has been known to live for nine or ten years in confinement, feeding principally upon vegetables, salad, white bread, groats, or bran steeped in water.

The MANAKINS (*Pipra*) constitute an extensive family of most beautiful and gaily-plumaged birds, inhabiting America, Southern Asia, and New Holland. Almost all the members of this group are of small size, few being larger than a Pigeon, and all are clothed in soft, silky feathers, glowing with the most brilliant hues. Their bodies are compact ; their wings short, or of moderate length ; their beak short, broad at the base, arched at the culmen, and slightly hooked and incised at its extremity. The feet are powerful, the tarsi rather long, and the toes comparatively short. The plumage, always compact and thick, varies much in its coloration, according to the age and sex. All these birds inhabit forests and woodland districts, some few frequenting hilly or mountainous tracts, while the greater number are only seen in lowland regions. Most of them are extremely lively and social, passing their time in flying in small parties about the summits of forest-trees, and attracting the attention of travellers as much by the peculiarity of their cry as by the glowing tints of their plumage. They live almost exclusively on fruits of various kinds, sometimes on such as are of considerable size. Kittlitz mentions having upon one occasion seen a Manakin flying with such difficulty as to arrest his particular notice, and having brought down the bird with his gun, he found on examining the stomach that it contained a half-digested palm-nut. "How it was possible," he says, "for the bird to have swallowed a fruit nearly as large as its own body appeared to me most extraordinary, but close investigation showed me that the gape of this species, like that of a snake, is capable of great extension. I am, however, still at a loss to explain how the juices of the stomach were enabled to demolish so huge a morsel." Some few species also devour insects.

The ROCK BIRDS (*Rupicola*) comprise some of the largest species in the entire family. Their bodies are powerful ; their wings, in which the fourth quill exceeds the rest in length, are long ; the tail is short, broad, straight at the tip, and almost covered by the long feathers upon the rump. The tarsi are robust, the toes long, and armed with thick, long, and very decidedly hooked claws. The feathers upon the back are broad, with either sharp tips or angular extremities ; those upon the brow, top of the head, and nape, form an upright crest or plume.

THE COCK OF THE ROCK.

The COCK OF THE ROCK (*Rupicola crocea*), the best known species of this group, has been minutely described by many writers. The rich plumage of the adult male is of a bright orange-yellow ; the feathers that form the crest are deep purplish red ; the large wing-covers, quills, and tail-feathers brown, edged with white at their tips, and marked with large white spots. The females and young are of an uniform brown ; the lower wing-covers orange-red ; the rump and tail-feathers light reddish brown ; and their crest considerably smaller than that of the male. All have orange-red eyes, greyish yellow beaks, and yellowish flesh-pink feet. The male is twelve inches long ; his wing measures seven and his tail nine inches, the female is at least two inches smaller.

The Cock of the Rock is an inhabitant of Guiana and North-eastern Brazil, where it frequents well-watered mountain regions, and the immediate vicinity of waterfalls, only quitting these localities about June or July, to visit the woods and forests, in order to procure the abundant supply of ripe fruit that awaits it at that season; but it never, even during these excursions, descends into the open plains. Humboldt met with these birds on the shores of the Orinoco, and Schomburghk encountered them twice, each time in large flocks, whilst he was travelling through British Guiana, once on the Canuku Mountains, and again amongst the sandstone rocks near Wenham Lake. "On one occasion," says Schomburghk, "after ascending to the summit of a lofty precipice, so entirely covered with huge blocks of granite overgrown with moss and ferns as to be almost impassable, we came suddenly upon a small open spot, entirely destitute of vegetation. A signal from the Indian who accompanied me warned me to conceal myself silently amongst the surrounding brushwood. We had only been for a few moments thus hidden from view, when we heard a sound so exactly resembling the cry of a kitten that I concluded we were about to attempt the capture of some small quadruped. The cry was instantly and most exactly imitated by my guide, and he was again answered by similar voices proceeding from every direction. In spite of a sign from the Indian to have my gun in readiness, the first sight of the beautiful birds, whose strange notes had thus deceived me, took me so completely by surprise, that I quite forgot to fire until too late; for after darting rapidly from the bushes, and ascertaining by a rapid glance that they had been deluded by a false cry, they instantly retreated to their former shelter. Before leaving the spot, however, I succeeded in shooting seven of the flock, but was not fortunate enough to see them perform the peculiar dances and evolutions I had heard described by my brother and my Indian guide." We will give our readers a description of the strange and interesting spectacle here alluded to, as afterwards witnessed by himself, in the same naturalist's own words:—"Having at last attained a suitable spot, we listened breathlessly for the cry of the birds, and my guides having ascertained exactly where they were amusing themselves, I was noiselessly conducted behind some bushes close to their ball-room, and after we had lain ourselves flat on the ground, saw one of the most attractive and extraordinary sights I ever beheld. Some twenty of these glorious birds were seated upon the stones and rocks around a small open space, in the centre of which a solitary male was dancing vigorously, and performing a great variety of evolutions, alternately springing repeatedly with both feet from the ground, spreading his wings, and moving his head, with most comical gestures, from side to side, waving his tail like a wheel through the air, and then, when nearly exhausted by his long-sustained exertions, concluding by walking coquettishly around the open space, as though desirous to receive the applause of the spectators, which the females expressed by uttering a very peculiar cry. One after another the males came down and took their turn in amusing the company, each going back to his seat before another performer commenced. So completely absorbed was I in watching these strange evolutions, that I had entirely forgotten my Indian companions, and was much startled when a sudden shot was heard, and four of these beautiful birds fell. The rest of the party at once rose in great terror, leaving their companions dead upon the ground."

The remarkable performance thus described by Schomburghk is no doubt a part of the courtship of the Cock of the Rock. We learn from the same authority that the nestlings are to be found at all seasons of the year, but in the greatest numbers about March, when the plumage of the male is in its full beauty. The nests found by Humboldt in Orinoco were made in holes in the granite rocks, whilst those seen by Schomburghk were built in clefts and fissures, suspended like the nest of a Swallow, and covered with resin. One of these nests is often occupied for years together, and repaired by the addition of fresh fibres, feathers, or down, for the reception of each new brood. It is by no means uncommon to find a great number of nests in the same cleft or hole. The brood

consists of two white eggs, marked with black, and somewhat larger than those of a Pigeon. The nestlings are reared upon the same fruits and berries that afford the parents their principal means of subsistence. Great numbers of these splendid birds are shot annually, as their skins not only command a high price, but are much employed by the Indians in making a variety of beautiful decorations: a large state mantle worn by the Emperor of Brazil was entirely composed of their feathers. In some districts of South America the natives are compelled to bring a certain supply of skins as tribute, and are thus quickly diminishing the numbers of these elegant creatures. Their flesh is well-flavoured, but of a very peculiar colour, being bright orange-red. Humboldt tells us



THE COCK OF THE ROCK (*Rupicola crocea*).

that the Cock of the Rock is much valued by the Indians as a domestic favourite, and is kept by them in cages made of the stalks of palm-leaves.

Another very similar species, found only in Peru, the Peruvian Cock of the Rock (*Rupicola Peruana*), lives entirely amongst trees, upon the berries and fruits of which it subsists; but it exhibits none of the dancing propensities of its Brazilian relative. We learn from Tschudi that in no instance did he ever see one of these Peruvian birds either on rocks or upon the ground, but always associated in large flocks, that lived and built their nests upon trees. He tells us that they are easily discovered from a considerable distance by their loud and most discordant cry.

The TRUE MANAKINS (*Pipra*) comprise a number of small and most magnificently-tinted birds, distinguished by the shortness of their wings and tails. In the former the primary quills are

graduated, very narrow towards the tip, and do not extend beyond the base of the small tail, which is either conical or quite straight at its extremity. The short high beak is compressed at its centre, slightly incised directly behind the hook that terminates the upper mandible, and furnished with a sharp ridge at its culmen. The tarsi are high and thin, and the toes short, the outer and centre toes being united as far as the first joint. The compact thick plumage is extremely short in the region of the forehead, and takes the form of fine bristles around the nostrils and the base of the beak. In the coloration of the male, black predominates, affording a rich contrast to the glowing fiery tints that adorn some parts of his body; whilst the females and young usually appear in a modest garb of greyish green. The Manakins live in pairs, or small parties, and principally frequent the inmost glades of their native woods and forests, hopping from bough to bough with untiring sprightliness, and enlivening the most gloomy recesses of their sylvan haunts by their gay colours and animated twitter. Before noon these pairs or parties unite with other birds in search of food, and at the approach of the midday heat again retire to their favourite sheltered nooks. Insects, fruits, and berries of various kinds, constitute their principal food, and to obtain these they occasionally venture near the abode of man. Schomburghk mentions having seen several of these usually very timid birds approach his tent daily, in order to gather the ripe fruit from some fig-trees that grew close to his encampment. The nest of the Manakins is carelessly formed of moss, and lined with cotton wool. The two eggs that constitute a brood are unusually elongated, of a pale tint, and marked with delicate spots that generally form a wreath at the broad end.

The LONG-TAILED MANAKINS (*Chiroxiphia*) constitute a prominent group of the family under consideration, and are recognisable by the prolongation of the centre tail-feathers, this peculiarity being particularly observable in the male.

THE LONG-TAILED MANAKIN.

The LONG-TAILED MANAKIN (*Pipra-Chiroxiphia-caudata*) has a sky-blue body, with black wings, throat, and tail, only the two centre feathers of the latter being blue; the brow and top of the head are red. The females and young are of an uniform greenish hue, shaded with brown upon the quills and the extremities of the tail-feathers. Both sexes have dark brown eyes, light reddish brown beaks with very pale margins, and brownish flesh-red feet. The male is about six inches long and ten broad; his wing measures two inches and five-sixths, and his tail two and a half inches. The female is only a few lines smaller than her mate.

The Prince von Wied tells us that he met with this beautiful species very frequently during his travels through Bahia, and generally found it associated in small flocks, which took refuge amid the dense foliage of the trees at the first alarm of danger. We learn from the same author that during the breeding season they live in pairs, and usually build in the fork of a branch, at no very considerable height from the ground. The nest is small, carelessly formed of twigs, blades of grass, wool, and moss, woven roughly together, and generally contains two large eggs, with a greyish yellow shell, marked with indistinct spots, and a somewhat more clearly defined wreath at the broad end. The call-note of the bird is a loud, clear, piping tone. According to Burmeister, the Long-tailed Manakin is never seen near the settlements of the colonists.

THE TIJE.

The TIJE (*Pipra-Chiroxiphia-pareola*) is the species we have selected to represent a group possessing tails that are quite straight at the extremity. The body of the male is principally of a coal-black, the back alone being sky-blue, whilst the head is adorned with a magnificent blood-red

fork-shaped tuft or crest. The plumage of the female is entirely siskin-green, without markings of any kind. Both sexes have greyish brown eyes, black beaks, and yellowish red feet. The length of this bird is four inches and two-thirds, and the breadth nine inches and six lines.

The Tije is met with very extensively in a northerly direction, from Bahia as far as Guiana, where it inhabits the forests and woodland districts, subsisting exclusively upon fruit and berries. Schomburghk describes the nests he found as formed of moss and cotton wool. They contained but two eggs. Incubation, he tells us, takes place in April and May. The call-note of the Tije is monotonous and loud.

THE BLACK-CAP MANAKIN.

The BLACK-CAP MANAKIN (*Pipra-Chiromachæris-Manacus*) is the representative of a group known as the *Chiromachæris*, recognisable by their high tarsi, the sickle-shaped form of the first primary quill, and the beard-like development of the plumage in the region of the chin. In the Black-cap Manakin the top of the head, back, wings, and tail are black; the rump grey; the neck, throat, breast, and belly white. The plumage of the female is entirely green. The eyes of both sexes are grey, their beaks lead-coloured, and whitish on the lower mandible; the feet are pale yellowish flesh-colour. "This beautiful bird," says the Prince von Wied, "is found extensively throughout South America, and is particularly numerous in Guiana, living, except during the breeding season, in small parties and flocks, that keep either quite close to the ground, or at no great distance from its surface. When in flight they move from spot to spot with astonishing celerity, the rapid action of their wings occasioning a strange loud sound, not much unlike the drone of a spinning-wheel." The voice of the Black-cap Manakin is likewise described by travellers as very remarkable. It is, we are told, capable of uttering two entirely dissimilar notes, the first of which resembles the sharp, cracking noise produced by breaking a nut, followed by a bass note so deep as to lead travellers to suppose it to be rather the growl of a large quadruped than the cry of a small bird. The food of this species consists of insects and berries. The nest is similar to that of its congeners. In Brazil the Black-cap Manakin is called the "Mono," or "Monk," from the faculty it has of inflating the feathers upon its throat in such a manner as to resemble a beard.

The PANTHER BIRDS (*Pardalotus*) constitute a group of small Australian species, very nearly allied to the Manakins, but possessing short thick beaks, very broad at the base, and deeply indented behind the hooked tip of the upper mandible. Their feet and tarsi are long and thin, the exterior and centre toe being partially united; the wings are pointed, the tail short. The plumage is conspicuous for its elegant markings.

THE DIAMOND BIRD.

The DIAMOND BIRD (*Pardalotus punctatus*), as the best known species is called, has received its name from the spots on its plumage. The crown of the head, wings, and tail, are black, with a round white patch at the tip of each feather; a white streak passes above the eyes, the cheeks and sides of the neck are grey, the feathers on the back grey, shading at their roots into brown, and edged with black at the extremities. The uppermost tail-covers are cinnabar-red; the front of the throat, breast, and lower tail-covers yellow; the belly and sides are yellowish red; the eyes deep brown, the beak brownish black, and the feet brown. The female resembles her mate, but is somewhat less brightly coloured. Both sexes are three inches and a half long.

The Diamond Bird is found throughout the whole of Southern Australia, from east to west, and is still numerous met with in Van Dieman's Land. Trees and bushes are its favourite resorts, and in search of these it ventures freely into the gardens of the settlers, where it speedily attracts attention

by the activity it displays in gleaning its insect fare from the leaves and branches, and by the constant repetition of its very pleasing piping note, composed of two syllables, which have been freely translated by the German settlers into the words, "Wie tief, wie tief." The most striking peculiarity, however, in this beautiful little bird is the strange manner in which it builds, the nest being placed not in hollow trees, but in holes excavated by the brooding pairs in the ground, generally on the side of some steep declivity. These excavations form galleries, or passages, usually from two to three feet long, and at their mouth are just large enough to allow the bird to pass through, whilst the lower end is made much wider, for the reception of the nest, and so raised as to insure safety from the entrance of rain. The chamber for the accommodation of the young is of a round shape, about three inches in diameter, with an entrance hole in its side. This apartment is most beautifully formed of scraps from the bark of the gum-trees, woven together with a perfection of neatness that cannot fail to

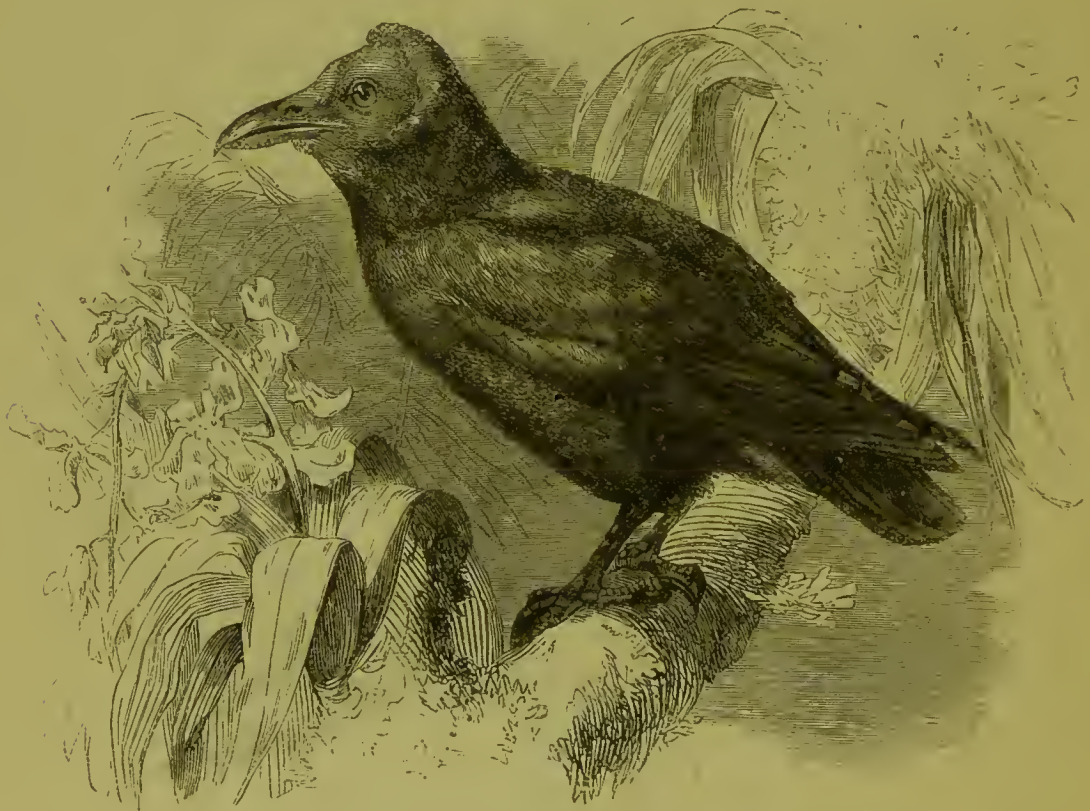


THE DIAMOND BIRD (*Pardalotus punctatus*).

astonish all who see it, if they consider that the labour of its construction is carried on entirely in the dark; the Diamond Bird affording, in this respect, a very striking contrast to such other members of the feathered creation as build under similar circumstances, their nests being, almost without exception, a mere heap of materials thrown loosely and carelessly together, without the slightest attempt at shapeliness, or endeavour to arrange the heterogeneous mass. Gould was fortunate enough to discover a number of these nests, notwithstanding the care taken by the Diamond Birds to excavate only in such localities as are completely overgrown with plants or the roots of trees. The brood consists of four or five round, smooth-shelled eggs, of a pale reddish white. The female lays twice within the year.

The BALD-HEADED CROWS (*Gymnoderi*) constitute a family generally regarded as nearly allied to the Manakins (*Pipræ*), although differing considerably from the latter in the peculiarity of

their habits and the superiority of their size, which varies from that of a Crow to that of a Thrush. The Gymnoderi are recognisable by their powerful body, (in many respects resembling that of a Crow), short neck, moderately long and pointed wings, in which the third quill exceeds the rest in length, and short tail, composed of twelve feathers, and straight at its extremity. The beak varies somewhat in different groups, but is usually flatly compressed both towards the base and at the hooked tip, which is furnished with a slight cavity, for the reception of the end of the lower mandible. The gape extends very far back, nearly to beneath the eyes. The feet, though short and strong, are only fitted for perching, and are seldom employed as means of progression. The plumage is thick, compact, and composed of large feathers, but differs so considerably in different species as to render a general description impossible. In all the members of this family the windpipe is very wide, and furnished on each side with a delicate layer of muscular fibres.



THE CAPUCHIN BIRD, OR BALD FRUIT CROW (*Gymnocephalus calvus*).

The Bald-headed Crows inhabit the forests of South America, and subsist entirely, or almost entirely, upon juicy fruit. In disposition they are indolent, possessed of but little intelligence, and extremely shy. Some few species are rarely heard to utter a note; but they are, for the most part, remarkable for the loudness of their voice, by which their presence is readily detected.

THE CAPUCHIN BIRD.

The CAPUCHIN BIRD, or BALD FRUIT CROW (*Gymnocephalus calvus*), represents one of the most remarkable of the groups into which the family of Gymnoderi is divided. The body of this species much resembles that of a Crow, with some slight variation in the different members; that is to say, the beak is considerably flatter, the feet shorter and stronger, and the toes comparatively much longer than in that bird. The slightly-pointed wings extend to the middle of the short tail; the

region of the beak, bridles, and eyes, the brow, the top of the head, and the throat, are bare, and along the cheek-stripes are four stiff bristles. The plumage is compact, of a reddish brown colour, shaded with olive-green upon the back; the quills and tail-feathers are blackish brown, the secondaries tinted with red; the upper wing-covers are greenish brown; the face, beak, and feet black; and the eyes dark brown; the bare portions of the face are slightly strewn with bristles; in the young these bristles are replaced by a whitish down, and the entire plumage varies considerably, not only from that of the adult birds, but in different individuals. The body of this species measures sixteen, the wing nine, and the tail four inches.

We are almost entirely without particulars as to the habits of these remarkable birds, except that they live in pairs in the depths of the forests of Guiana and North Brazil, and are rarely met with



THE UMBRELLA BIRD, OR UMBRELLA CHATTERER (*Cephalopterus ornatus*).

at an altitude of more than 1,200 feet above the level of the sea. Fruits appear to constitute their principal nourishment; and when not engaged in satisfying the calls of hunger, the couples are usually to be seen perched side by side upon a branch. Their cry, which resembles the bleating of a calf, is uttered, according to Schomburghk, at regular intervals.

THE UMBRELLA BIRD.

The UMBRELLA BIRD, or UMBRELLA CHATTERER (*Cephalopterus ornatus*), is one of the most extraordinary of birds, as far as regards the singular ornaments with which it has been provided. It is about the size of a Crow, and the whole of its plumage being of a deep black it has a good deal of the corvine character in its aspect. Its head is adorned with a large and spreading crest, which appears intended to act as a parasol: this crest is composed of long, slender feathers, rising from

a contractile skin on the top of the head; the shafts are white, and the plumes glossy blue, hair-like, and curved outwards at the tips. When the crest is laid back the shafts form a compact white mass, sloping up from the back of the head, and surmounted by the dense hairy plumes. Even in this position it is not an inelegant ornament, but when fully opened its peculiar character is developed. The shafts then radiate on all sides from the top of the head, reaching in front beyond and below the tip of the beak, which is thus completely concealed from view. The crest forms a slightly elongated dome, of a beautiful shining blue colour, having a point of divergence rather behind the centre, like that in the human head. The length of this dome from front to back is about five inches, the breadth from four inches to four and a half. As if this remarkable crest was not enough to distinguish the bird amongst its fellows, it is likewise furnished with a second singular ornament, resembling which nothing is to be found in the feathered creation. This is a long cylindrical plume, depending from the middle of the neck, and carried either close to the breast, or puffed out and hanging down in front, the feathers lapping over each other like scales, and bordered with fine metallic blue. On examining this plume, it is found not to be composed of feathers only; the skin of the neck is very loose, and from the lower part grows a long, fleshy process, about as thick as a Goose's quill, and an inch and a half long, to which the feathers are attached, thus producing a beautiful tassel depending from the breast, and forming an appendage as unique and elegant as the crest itself.

The plumage of this strange bird is of an almost uniform black; the feathers on the mantle edged with dark greenish black; the crest is blackish blue; the quills and tail-feathers deep black. All the small feathers have white shafts; the eye is grey; the upper mandible blackish brown, the lower greyish brown, and the feet pale black. The length of this species is about nine inches and a half; the wing measures eleven inches and three lines.

The Umbrella Birds are inhabitants of Peru, where they particularly frequent the precipices on the eastern side of the Cordilleras, to an altitude of 3,000 feet above the sea; and from thence are met with as far as Rio Negro, and the boundaries of Chili. They associate in small flocks, which subsist principally upon fruit of various kinds, and live almost entirely at the summits of lofty trees. Their remarkable cry, which resembles the lowing of a cow, is most frequently heard just before sunrise and after sunset. We are entirely without particulars as to their nidification and manner of breeding.

The BELL BIRDS (*Chasmarhynchus*)—so called from the resemblance of their voices to a muffled bell—constitute a group with whose habits we are much more familiar. Their body is compact, and about as large as that of a Pigeon. The wings, in which the third and fourth quills exceed the rest in length, are long, and extend as far as the centre of the tail: the latter is slightly rounded at its tip. The beak is about half as long as the head, and so much depressed as to be far broader than it is high; the upper mandible is slightly arched, and curves somewhat at its tip, behind which is a small tooth-like appendage. The gape is remarkably large. The tarsi are short, and the toes long. The thick plumage is composed of small feathers, and takes the form of bristles in the region of the beak, which is also furnished with very remarkable fleshy appendages resembling those possessed by the Turkey. The coloration of the feathers varies very considerably, not only in the four species that compose the group, but in the different sexes.

THE BARE-NECKED BELL BIRD.

The BARE-NECKED BELL BIRD (*Chasmarhynchus nudicollis*). This bird, which is called "The Blacksmith" by the Brazilians, is entirely of a pure snow-white, with the exception of the bridles

and throat, which are bare and of the colour of verdigris. The eyes are greyish brown, the beak black, and the feet flesh-pink. The length of this species is about ten, and its breadth nineteen inches; the wing measures nine inches and three-quarters, and the tail three inches and a quarter. The female is not quite so large as her mate, she is black upon the throat and top of the head; the upper part of her body is of a siskin-green, the under side yellow, longitudinally spotted with black, and streaked with whitish and yellowish lines upon the throat. The young male resembles the mother until it is one year old, when it acquires white spots, and only in its third year appears in the garb of the adult.

THE ARAPONGA.

The ARAPONGA (*Chasmarhynchus variegatus*) is also white over the greater portion of its body, but the delicate purity of its hue is marred by a slight intermixture of grey. The wings are deep black, and the top of the head pale brown. The front of the throat is bare, but studded with a multitude of small, fleshy, worm-shaped appendages, of a deep brown colour; the beak and feet are black. The plumage of the female is greenish, and on her throat the strange appendages of the male are replaced by feathers.

THE TRUE BELL BIRD.

The TRUE BELL BIRD (*Chasmarhynchus carunculatus*) is entirely snow-white. The male is furnished with a very remarkable wattle at the base of the beak, which is hollow, black, and muscular. When the bird is under the influence of no emotion, this wattle is flaccid and pendent, but when excited he raises and inflates this fleshy horn until it attains a length of about two inches, and a thickness of half an inch at its root. Schomburghk tells us that the female is larger than her mate, but her fleshy lappet is proportionately considerably smaller. The young resemble the mother, and present a very remarkable appearance whilst in their state of transition.

THE THREE-WATTLED BELL BIRD.

The THREE-WATTLED BELL BIRD, or HAMMERER (*Chasmarhynchus tricarunculatus*), is furnished with three fleshy lappets, one of which grows above the base of the beak, whilst the two others appear as prolongations of the corners of the mouth. The colour of these lappets, as also of the bill and feet, is blackish; that of the eye, light brownish red. The head and throat of the male are bright chestnut-brown, and the nape and upper part of the breast pure white. The female, whose plumage is olive-green, streaked with a lighter shade on the under side, is entirely without the appendages that distinguish her mate. The young resemble the mother. The length of this species is twelve inches; the wing measures six and a half, and the tail four inches; the lappet on the upper part of the beak is from two inches and a half to three inches long, and those at the corners of the mouth about two inches and a half. In the young the fleshy appendages are mere rudiments.

All the different kinds of Bell Birds above described belong to South America. The Blacksmith inhabits the Brazilian forests, the Araponga is met with in the northern portions of the continent, whilst the True Bell Bird is found in Guiana, and the Hammerer in Costa Rica. As far as is at present ascertained, it would appear that in their habits and mode of life these different species closely resemble each other. The Blacksmith, we are told by the Prince von Wied, is one of the most attractive and beautiful of the many strange occupants of the magnificent forests of Brazil; the dazzling whiteness of its plumage affording a striking contrast to the rich deep hues of the leafy retreats it usually prefers. Its loud clear note is distinctly heard to a very considerable distance, as it rings, bell-like, at regular intervals, through the surrounding silence, or is rapidly repeated with a force and peculiarity of tone that strongly resembles the blows made by a smith upon his anvil. No

sooner does one bird commence than all the rest of a party follow suit, and combine their efforts to produce such a concert as must be heard to be appreciated. The Blacksmith also frequently perches upon the very topmost bough of one of the giant trees of the forest, at such a height as to be out of the sportsman's reach, who is thus often compelled to content himself with admiring its snowy plumage, as the bird stands in bold relief against a background of deep blue sky, and ever and anon sounds its metallic note, as though to call attention to its conspicuous position. Waterton speaks with equal enthusiasm of the True Bell Bird, whose voice, he tells us, is heard throughout the entire day, but most frequently at early morning or after sunset. Each tone is followed by a considerable pause, lasting, after the first three notes, for the space of six or eight minutes, when the strange performance recommences, with not more than one minute's interval between the sweet, bell-like sounds, which are often audible at a distance of three miles. As long as the bird is in repose, the fleshy lappets we have described hang downwards, but they are raised and turned in all directions at the instant that the cry is uttered; and, on its cessation, drop at once to their former position. The females generally perch on the lowest branches, but are not easily discovered, owing to their silence, and the greenish hue of their feathers, which enables them to hide securely amid the foliage. Fruits and berries constitute the principal food of this group, and, according to Schomburghk, they also occasionally eat insects. The Bell Birds make their appearance in Demerara and Berbice about May or June, from whence they spread over the face of the country, rarely occupying wooded heights at more than from 1,200 to 1,500 feet above the sea, and never visiting the immediate neighbourhood of the coast. Strange to say, notwithstanding the interest excited in these strange and beautiful occupants of the South American forests, we are still entirely without any particulars as to their breeding, nidification, or powers of enduring life in a cage.

The THRUSHES (*Turdidæ*) constitute a group that comprises some of the larger birds of the order. Their body is powerful, their neck short, and head large; the bill is straight, compressed at its sides, and slightly incised at the tip of the upper mandible, which curves downwards over the lower portion of the beak. The tarsi are high, and covered with large plates; the toes moderate, armed with very decidedly hooked claws; the wing is of medium length, and contains ten primary quills, of which the third is the longest; the formation of the tail varies considerably; in some cases it is short and rounded, in others long and graduated; but, generally, it is of moderate size, and more or less straight at its extremity; the plumage is thick, usually of some dusky hue, but occasionally brightly coloured.

The GROUND SINGERS (*Humicolæ*), as the most gifted of the above family have been named, include some of the smaller species of Thrushes, and are recognisable by their comparatively slender bodies, short wings, moderate-sized tail, high tarsi, pointed beaks, glossy dark plumage, and expressive eyes. The Ground Singers are entirely confined within the limits of the eastern hemisphere, and make their appearance in Europe with the commencement of spring, leaving again for warmer latitudes at the approach of autumn. They usually prefer woodland regions, more especially such as are well watered, as they there find an abundance of the larvæ, worms, and berries, upon which they mainly subsist. Unlike the groups above described, they glean their food principally from the ground, as they hop over the surface of the soil with the utmost agility, and rarely seek their insect fare upon the trees, from which, however, they pluck ripe berries with much adroitness. From every point of view we must recognise in these birds a very high degree of intelligence, all the senses being well developed, and their sight and hearing particularly good. When upon the wing, their motions are rapid and easy, and as regards their wondrous vocal gifts we need

only allude to one member of the group, the Nightingale, the "Queen of Song," to convince our readers that their musical powers are unequalled in the whole feathered creation. In disposition they are vigilant, acute, and lively, ever on the alert against danger, and daring and prompt in encountering a foe. The nests built by the Ground Singers are large, thick, and usually placed in holes among the projecting roots, or in the hollow trunks of trees, also in hedges or other similar



THE NIGHTINGALE (*Luscinia Philomela*).

situations, but they vary considerably in appearance, according to the species of the builder. The brood consists of from four to seven eggs, which are either of one uniform colour or marked with faint spots. The cares of incubation are undertaken by both parents. The young are at first clad in a speckled plumage, but resemble the adult birds before the end of the first autumn. Most of the members of this delightful group are eminently suited for life in a cage, and become attached to those who rear them.

The NIGHTINGALES (*Luscinia*) are recognisable by their slender body, strong legs, high tarsi, moderately long wings and tail, the latter of which is rounded at the extremity. The beak is almost straight, and pointed at its tip; the close thick plumage in both sexes is of a reddish grey.

THE NIGHTINGALE.

The NIGHTINGALE (*Luscinia Philomela*)—see Coloured Plate XVIII.—as the species so familiar to us all is called, is reddish grey upon the upper part of the body, the top of the head and the back being of a deeper shade; the under side is light yellowish grey, palest on the throat and near the centre of the breast; the inner webs of the quills are dark brown, and the tail feathers brownish red. The eye is also brownish red, and the beak and feet reddish grey. In the young birds some of the feathers on the back have light yellow spots on the shafts, and are edged with pale black, thus giving the plumage a speckled appearance. The length of this bird is six inches and a half, and its breadth nine inches and two-thirds; the wing measures three and the tail two inches and three-quarters. The female is slightly smaller than her mate.

This Nightingale is met with over the whole continent of Europe, from Sweden to the Mediterranean, and over a large portion of Central Asia, as far north as the middle of Siberia; it also visits North-western Africa in the course of its migrations. Central Europe, Turkey, and Asia Minor possess a very similar species (*Luscinia major*), although, as its name indicates, larger and stronger than that above described, from which it is also distinguished by the shortness of the first wing-quill, and the markings that adorn the breast. Both these vocalists are much alike in their habits and general demeanour, but are readily identified by the peculiarities that characterise their song. Woods, groves, and leafy forests in the immediate vicinity of water afford the favourite retreats of these "most musical, most melancholy" songsters; in such localities they live, each pair within its own especial domain, which, although small, is jealously guarded, and boldly defended from all intrusion. The larger species would seem to prefer low-lying districts, but its more celebrated relative, according to Tschudi, is met with in Switzerland and Spain, at an altitude of from 3,000 to 5,000 feet above the sea, if trees and brushwood be there attainable. Some parts of Southern Europe are especially frequented by these delightful birds; Spain in particular is extremely fortunate in this respect; and in certain districts their enchanting voices are heard from every bush and hedge. The declivities of Sierra Morena may be literally described as an extensive "nightingale garden;" and those who, like ourselves, have been so fortunate as to spend a spring morning on Montserrat, or an evening within the walls of the ruined Alhambra, must own that they have enjoyed a concert of sweet sounds that could not be surpassed. For our own part, as we listened to a hundred thrilling voices combining in the performance of their vesper hymn, we were ready to exclaim, with good old Izaak Walton, "Lord, what psalmody hast thou provided for thy saints in heaven, when thou affordest bad men such music on earth!" The general demeanour of the Nightingale is eminently reserved and dignified, and would appear to indicate that it was fully conscious of the admiration it can command. Even when hopping over the ground, it preserves a certain air of stateliness, as it springs from spot to spot, with body erect and tail upraised, pausing for a moment before every fresh effort. Whilst perching in the trees, also, the tail is elevated, but the wings are allowed to droop. Should the bird desire to pass from one branch to another, it accomplishes its object by one active leap, and rarely condescends to amuse itself by jumping from twig to twig. The flight of the Nightingale is undulatory, but though light and rapid, it is rarely sustained beyond a short distance: that these birds, however, are capable of great exertion whilst on the wing must be evident to all who have witnessed the endeavours of two contending rivals to drive each other from the field.

No sooner have the Nightingales arrived in Europe than their song is to be heard almost



THE NIGHTINGALE — *Luscinia Philomela*

incessantly. Some few pour forth their trilling notes throughout the long, bright night; but, for the most part, they only sing during the day, except just at the commencement of the breeding season, when the desire to please and attract their mates renders the male birds excited and restless. The nest of the Nightingale is a mere heap of dry leaves, rushes, and grass, with a lining of horsehair, cotton wool, or any similarly elastic material; occasionally twigs and straw are also employed. Naumann mentions an instance of a Nightingale building on a branch five feet from the ground, and of another that made its preparations for its little family in the centre of a heap of dry leaves that had been thrown down in a garden-shed; these are, however, exceptions to the general rule, their nests being, for the most part, placed in low bushes, upon felled trees, or in holes in the ground. The eggs, from four to six in number, have a delicate, glossy, greenish grey shell. Both parents assist in hatching their young, who are tended with great care, the male keeping a very sharp eye indeed upon his mate, lest she should endeavour to leave her charge in order to take a peep at the outer world, or even to stretch her wearied limbs. Bäsler mentions having been much amused upon one occasion, when he had scared a brooding female from her nest, by the cries of reproof and marital pecks that were forcibly employed by her indignant spouse, in order to drive back his partner to her maternal duties. Worms of various kinds, the larvæ of insects, ants, smooth-skinned caterpillars, and some species of beetles, constitute the principal food of the adult birds, and upon these the nestlings are likewise reared. During the autumn they also consume large quantities of berries. The young remain under the care of their parents until the approach of the moulting season. Almost immediately after leaving the shell the young males commence trying their voices, but give little or no indication of their future capabilities in the notes they utter during the first months of their life. It is not until the following spring that they become possessed of their full powers, at which time they seek a mate, and in her honour begin to pour forth a copious flood of sounds, as sweet and enchanting as those of the older birds. The moulting season commences about July, after which the autumn migrations commence. These journeyings are accomplished in families, or small parties, the birds flying with great rapidity to very distant countries. We ourselves have met with them occasionally in the forests of Southern Nubia and Eastern Soudan, and have observed that they appear to make themselves but little conspicuous during their absence from their native lands. About the middle of April they reappear in Europe, the males coming first, and at once seek their former haunts, announcing their welcome presence, and greeting their old home by joyous strains, that are continued without intermission for hours at a time, and even prolonged far into the night.

The HEDGE SINGERS, or TREE NIGHTINGALES (*Aëdon* or *Agrobates*), bear a strong family likeness to the True Nightingales, both in their habits and general appearance. They are met with in Southern Europe, North-western Asia, and Northern Africa. The members of this family are recognisable by their elongated body and comparatively strong beak, the upper mandible of which is very decidedly bent; the third and fourth quills of the long, broad wings are of equal length, the tail much rounded, and the tarsi low. Their plumage is soft, silky, and of a pale reddish brown, lightest upon the under side. The sexes are alike in colour, and the young without any spots upon their feathers. So very similar are all these birds in their mode of life that we shall confine ourselves to a full description of but one species.

THE TREE NIGHTINGALE.

The TREE NIGHTINGALE (*Aëdon galactodes*) is of a reddish grey upon the upper parts of the body, darker upon the top of the head than elsewhere; the nape is greyish, the under side greyish yellow or

dirty white, tinted with red on the sides of the neck, and with reddish yellow on the thighs; the cheeks are whitish brown, and a white streak passes over the eyes. The quills and upper wing-covers are brown, the former diversified with a narrow light brown edge, and the latter with a broad border of reddish yellow; the tail-feathers, with the exception of the one in the centre, are of a beautiful rust-red, with a white tip, the latter marked with a round, blackish brown spot; the eye is deep brown, the beak and feet reddish. This species is about seven inches long and eleven broad; the wing measures rather more than three, and the tail three inches.

The Tree Nightingales are found principally on arid spots, but sparsely overgrown with low brushwood, though they by no means avoid cultivated districts or the immediate neighbourhood of man. In Spain, they constantly frequent the vineyards and olive plantations, and in North-eastern Africa take up their abode in the gardens, or close to the huts of the natives, provided that they there find a few of their favourite bushes whereon to perch. We ourselves have never met with them in the primitive forests, or upon lofty mountains, though they often frequent wooded highlands. Such of these birds as inhabit Central Africa are stationary, whilst those occupying Northern Africa and Southern Europe migrate, leaving their more northern habitat about the end of September and returning in April. The males take their departure first, followed in a few days by their mates: arrived at their destination, they soon spread themselves over the face of the country. In their habits they are somewhat peculiar; they always select the very topmost point of a bush, post, or tree, as their ordinary perch, and on it they sit with tail erect, drooping wing, upright body, and legs drawn in, as they pour out their song, or glance sharply around in search of a worm or beetle. Should a prize of this nature be discerned, the bird will instantly dart down, flourishing and spreading its tail, and, after running rapidly for a few paces, seize its prey and return to its observatory, uttering a short call-note denoting extreme satisfaction. Their mode of flight and other movements are almost identical with those of the Nightingale, and like that bird they seek their food principally upon the ground, coming occasionally even into the streets of towns, when hard pressed for the means of subsistence, though at other times they are extremely cautious and timid. Strange to say, such as came under our own notice in Central Africa would permit the dark-coloured natives to approach quite close to them, but took instant alarm at the appearance of a white man. The voice of this species is capable of but very little variety, and will bear no comparison with that of its world-famed relative; yet, in spite of this inferiority, it is ever a favourite, its constant cheerfulness enlivening all that listen to its almost incessant song, which may be heard not only through the whole of the breeding season, but is uttered as the little creature runs, perches, or even flies through the air. The period of incubation commences at the end of May, and lasts for a considerable time. The nest, which is large and roughly formed of twigs, moss, and grass, lined with hair, wool, and feathers, is placed either against the trunk of a tree or on one of the larger branches, or in a thick bush. The eggs have a dirty white or blueish grey shell, marked with pale dark patches and brown spots. We are without particulars regarding the rearing of the nestlings, but have ourselves met with unfledged young as late as September.

The BLUE-THROATED WARBLERS (*Cyanecula*) are birds with slender bodies, short blunt wings, and high, slender legs. Their long beak is compressed at the nostrils, the upper mandible slightly raised, but sharp-pointed at its extremity. The plumage is lax, and varies in hue with the age or sex of the bird. In the male the upper part of the body is dark brown, the under side dirty white, streaked at the sides with greyish brown. The throat, which is of a magnificent ultramarine blue, is decorated in some instances with a dark star, which spreads and extends downwards like a black streak, separated from a crescent-shaped spot upon the breast by a delicate light line. A

band across the eyes is of a whitish, and the bridles of a blackish hue. The quills are brownish grey; the tail-feathers, except in the centre, blackish-brown at their distal half, rust-red towards the roots. The eye is dark brown, the beak black, the feet greenish in front, and yellowish grey behind. In the plumage of the female all the colours are paler than those of her mate. The young are spotted with rust-red on the back, and striped on the under side, their throat being whitish. This bird is six inches long and eight and a half broad; the wing measures two inches and three-quarters, and the tail two inches and a quarter. The various species of Blue-throated Warblers are distinguishable from each other by the somewhat varied coloration of their throats; thus, that of the male SWEDISH BLUE-THROAT (*Cyanecula Suecica*) has a reddish star in its centre, the WHITE-STARRED BLUE-THROAT (*Cyanecula leucocyana*) a white star, whilst the *Cyanecula Wolfi* is entirely without this decoration.



THE SWEDISH BLUE-THROAT (*Cyanecula Suecica*).

Of these the *Cyanecula leucocyana* is the largest, and the *Cyanecula Wolfi* the smallest species. The females of all closely resemble their mates in appearance.

These birds inhabit the northern portions of the Eastern Hemisphere, and from thence wander forth to visit Central Asia, Egypt, and Nubia, only occasionally venturing as far as Southern Asia or Central Africa. The autumn migration is undertaken in large parties, which fly in a direct line towards their destination, whilst in the spring, on the contrary, the males return first, and steer their aerial course as far as possible in the immediate vicinity of the banks of rivers or any large bodies of water, as in such localities they find an abundant supply of the worms, beetles, and similar fare that afford them their principal means of subsistence. The disposition of the Blue-throats in every way corresponds with their attractive appearance, and their intelligence is by no means inferior to that of the Nightingale. All their movements are characterised by a liveliness that seems to indicate

a thorough enjoyment of existence ; and their demeanour, as they hop quickly over the ground, with body erect and tail outstretched, evidently denotes a most satisfactory consciousness of their own personal charms. When climbing among, or perching on the branches of a tree or bush, they show to less advantage ; and their flight, though rapid, cannot be maintained for any great distance. The song of the various species differs considerably in quality ; that of the Swedish Blue-throat is, perhaps, the least pleasing to the ear, owing to the fact that the various strophes that compose it are each in turn repeated with a frequency that soon becomes wearisome to the hearer, after he has ceased to amuse himself with the strange droning under-tone or accompaniment kept up by the bird during the whole song, which produces the effect of two distinct voices. Amongst the Lapps this species is known as the "Hundred-tongued Warbler," from the great faculty it has for imitating, not only the notes of birds, but a great variety of sounds. Like the Hedge Warblers generally, it is most unwearied in these vocal exertions, which are often continued even whilst the little songster is running upon the ground. The nests built by the Blue-throats are often concealed in bushes, or among the roots of trees, with so much care as to render their discovery a work of difficulty. Holes in the banks of rivers or brooks are also sometimes selected for the reception of the nest ; that side of the water, according to Hinz, always being preferred which is most exposed to the rays of the morning or noon-day sun. The nest itself is large, open at the top, and formed of twigs and stalks of plants, lined with delicate blades of grass, and in northern latitudes with wool or hair. The eggs, which are laid in the middle of May, are from six to seven in number, and have delicate light blueish green shells, marked with reddish brown spots, and clouded with brown at the broad end. Both parents assist in the work of incubation, which lasts for about a fortnight. The young are reared upon worms and beetles. They leave the nest before they can fly, and soon learn to run over the surface of the ground with the rapidity of mice. No sooner is the first family fairly started in the world than the parents at once commence preparations for a second brood. When caged, the Blue-throat soon becomes very tame, but unless carefully tended only survives for a short time.

The RUBY NIGHTINGALES (*Calliope*) are a group of Asiatic birds nearly related to the Blue-throats, and forming, as it were, the connecting link between them and the Hedge Warblers. All have moderately long and powerful beaks, strong, high tarsi, large toes, and medium-sized wings, the first quill of which is unusually short. The tail is short, pointed at the sides, and rounded in the centre of its tip. The plumage is compact and smooth.

THE CALLIOPE OF KAMSCHATKA.

The CALLIOPE OF KAMSCHATKA (*Calliope Camtschatcensis*) is the species of the above group selected for description, as, according to Temminck, it may now also be regarded as an inhabitant of Europe. Upon the upper part of the body the plumage is olive-brown, deepest in shade upon the brow and head ; the under side is greenish grey, except the centre of the breast, which is white ; the bridles are black, and a streak over the eyes of glossy whiteness ; the throat is of a magnificent ruby red, and separated from the breast by a black line, that fades gradually into a brownish grey. In the plumage of the female all the colours are paler than in that of her mate. The young are dark brownish grey, marked with reddish yellow. The length of this species is six inches ; the wing measures two inches ; and the tail two inches and one-third.

According to Middendorf, these birds frequent the well-watered provinces and marshy districts of North-eastern Asia, from the middle of May till the beginning of October (occasionally, only, till the end of August), when they commence their migrations, journeying through Eastern Siberia, Mongolia, Southern China, and Japan, and reaching India about November. The Calliope usually remains

concealed during the day, and only ventures forth after twilight to obtain food, in quest of which it runs about exactly in the manner of the Blue-throats, displaying, however, even greater agility than they are capable of, when making its way through the long grass that abounds in its favourite marshy retreats.

Jerdon speaks of this species as shy, unsociable, and very silent during the greater part of the year; but with this last statement we by no means fully agree. Whilst performing their migrations, the two sexes certainly associate in flocks; and during the spring the notes of the males are to be heard both by day and night. The voice of the Calliope is very sweet, and though by no means loud, very clear. As the breeding season approaches the male commences singing still more energetically, and is usually to be seen perched, with inflated throat, wings outspread, and tail raised at a right angle with his body, on the topmost branch of a birch or alder-tree, whilst he perseveringly endeavours to attract the admiration of his mate who sits beneath, almost entirely concealed from view. The nests of these birds found by Middendorf on the banks of the Taimye were most beautiful works of art, neatly covered with a roof, and approached by a horizontal entrance-gallery excavated in the sand. The nests were found to contain about five blueish green eggs, which were laid in June. In China the Calliope is known as the "Hung-po" (Redbreast), or "Ching-po" (Goldbreast), and is much prized as a domestic favourite by people of all classes: it is constantly kept by the Chinese, not in a cage, but secured to a perch or branch by means of a string tied round the neck. This peculiar and very practical manner of preventing the escape of a bird is, as Swinhoe tells us, very extensively adopted in the Celestial Empire.

THE ROBIN REDBREAST.

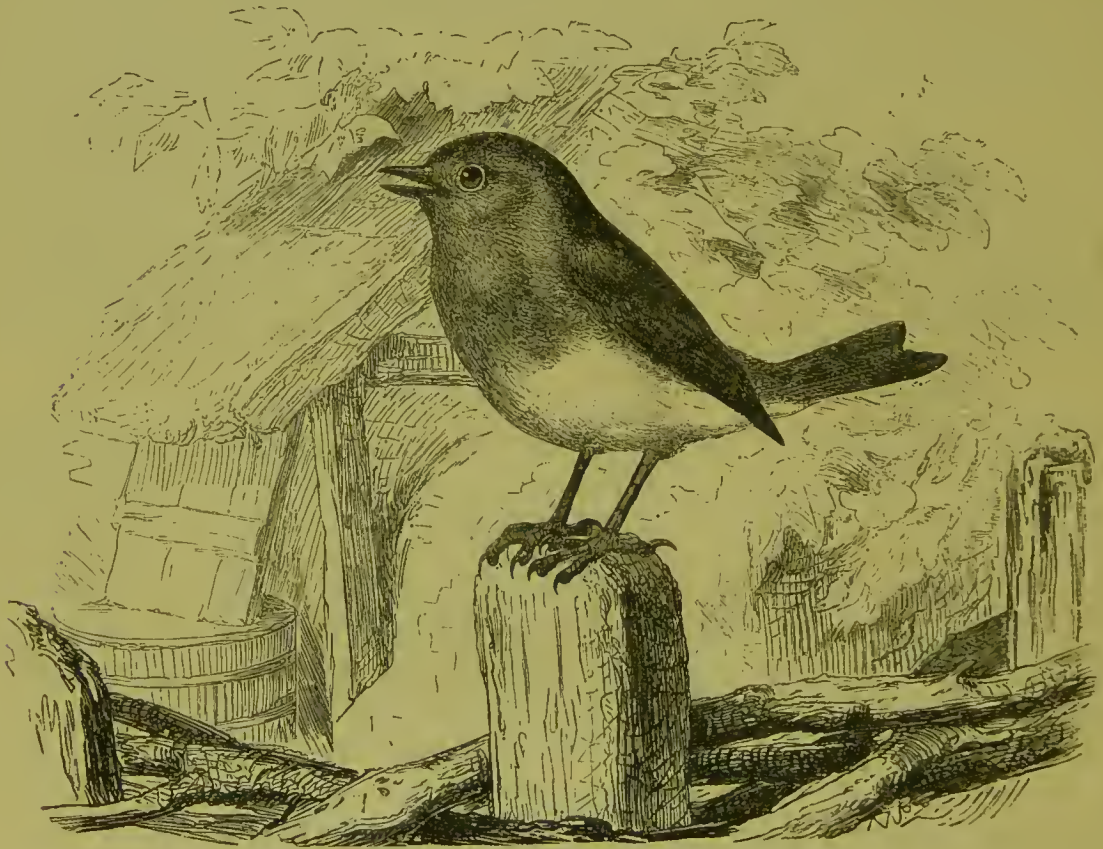
The ROBIN REDBREAST (*Erythaca rubecula* or *Rubecula silvestris*) is the last member of the family to which our space permits us to allude. In this species the upper mandible is arched and incised immediately behind its curved tip. The feet are of moderate height, and delicately formed; the wings, in which the fourth and fifth quills are the longest, are rather short and weak; the tail is of medium size, and slightly incised at its extremity.

The plumage is lax, and of a deep olive-grey upon the upper part of the body; the under side is grey; the brow, throat, and upper portion of the breast yellowish red. The female is somewhat paler than her mate, and the young are distinguishable by reddish yellow spots on the shafts of the upper feathers; the under side is reddish yellow, with grey spots and light edges to the feathers; the large, expressive eyes are brown, the beak blackish brown, and the feet reddish grey. The length of this bird is five inches and a half, and its breadth eight inches and a half; the wing measures two inches and three-quarters, and the tail two inches and a half.

Europe must certainly be regarded as the home of the Redbreasts; beyond its limits they seldom venture, except during their migrations, when some few travel as far as North-western Africa and the adjacent islands. By far the greater number of those met with in the northern and central countries of our continent usually only journey as far as Southern Europe. This lively, beautiful little bird, with whose sweet twittering voice and social fearless habits we are so familiar, is met with in all woodland districts, and may constantly be seen hopping nimbly about our fields and gardens, or flitting from bush to bush, quite close to our houses, in search of the spiders, worms, snails, and beetles upon which it subsists. In winter, when it is difficult to obtain these means of support, it lives upon various kinds of berries. The nest of the Robin is placed in holes in the ground, in hollow trunks of trees, or similar situations, at no great elevation, and is formed of moss, stalks, and leaves, woven together, and delicately lined with hair, wool, and feathers. Should the margin of the cavity in which the nest is placed not project in such a manner as to form a sheltering cover, a

roof is constructed, and an entrance made in the side. The eggs, which are of a yellowish white, marked with reddish yellow spots (see Fig. 33, Coloured Plate XVI.), are from five to seven in number; these are laid about May. The parents brood alternately during a fortnight, they feed the nestlings assiduously with worms and insects, and diligently instruct and tend them for about a week after they are fledged; they are then permitted to go forth into the world on their own account; whilst, if the weather be fine, the old birds at once prepare for a second family. Numberless are the anecdotes that might be quoted to show the kindly disposition of these interesting little favourites, but we must confine ourselves to the mention of two or three exemplifications of their habits.

The first that we shall narrate happened in our own village. Two male Redbreasts were captured and confined in the same cage. From the moment of their imprisonment they seemed



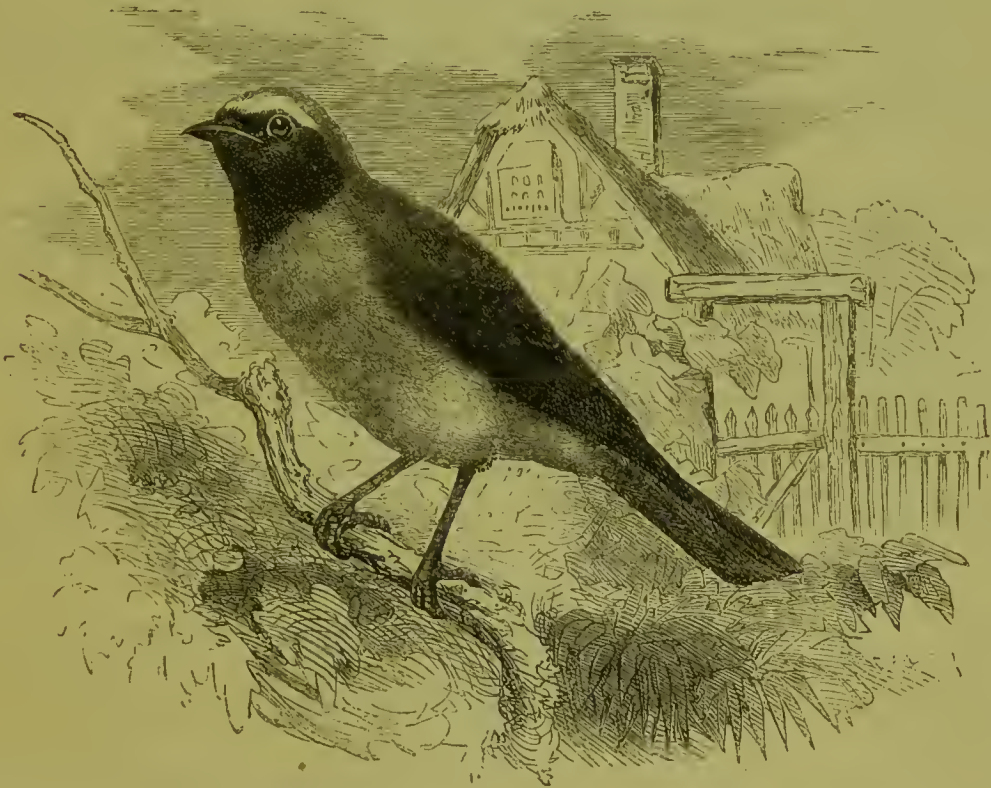
THE ROBIN REDBREAST (*Erythaca rubecula* or *Rubecula silvestris*).

entirely to have laid aside their usual amiable and social demeanour; morning, noon, and night they squabbled and pecked each other, and fought with an enduring rancour which plainly showed that they each grudged every atom of food or drop of water obtained by the other. This state of affairs was at last brought to a very unexpected termination; one of the captives broke its leg, and forthwith the conduct of its companion was completely changed; it at once took charge of the helpless invalid with as much tenderness as if it had been one of its own young, fed and tended it until the limb was restored; and, strange to say, even after the invalid was strong and well again, neither of the birds ever showed the slightest inclination to renew former hostilities.

An instance of the truly parental affection they often exhibit towards the young of entirely different species is mentioned by Naumann, who upon one occasion introduced an unfledged Linnet into the cage of a Redbreast. No sooner did the hungry nestling begin to clamour for food than the

parental feelings and sympathy of the Robin were awakened ; it at once hopped off to procure a dainty mouthful, which it placed tenderly in the youngster's gaping beak, repeating the performance till the calls of hunger were completely satisfied. Even in its native woods, and surrounded by its own kind, the Redbreast will occasionally contract a close friendship with a bird of another species. Posslen mentions a pretty instance of this social tendency as having occurred in Germany. "In a wood near Köthen," he says, "a Redbreast was found to have actually deposited six eggs in the same nest with the six eggs laid by a Linnet, the two mothers brooding side by side until the nestlings made their appearance."

The WARBLERS (*Monticolæ*) constitute a numerous family, whose members vary considerably in size, but closely resemble each other, both in appearance and habits. These birds are recognisable



THE GARDEN REDSTART (*Ruticilla phænicura* or *Phænicura ruticilla*).

by their slender bodies, moderate-sized or long wings, in which the third quill generally exceeds the rest in length ; short tail, either straight or excised at its tip ; slender tarsi, and awl-shaped beak, with quite straight or slightly arched upper mandible, the latter furnished with a very short, delicate hook at its extremity. The coloration of their thick, lax plumage differs according to the age and sex, the males being usually much more beautifully coloured than their mates, and the young distinguishable from the adults by the spots with which they are adorned. Many species are remarkable for the brownish red and white hues that predominate in the tail-feathers. Most of the various members of this family occupy rocky or stony districts, whilst some few, on the contrary, frequent woods, gardens, or pasture-land. In disposition they are watchful, lively, and restless, but by no means social, never congregating, even during the migratory season, in flocks, but living invariably in pairs, or at most in families. Morning has no sooner dawned than they commence hopping, or rather running over the

ground, climbing among the branches of bushes, or flying about in short courses over a considerable tract of country, always returning to pass the night upon their usual resting-place. Unlike other singing birds, when excited, they bow the head repeatedly, and either flourish and spread their tails or agitate them with a tremulous kind of motion. The voices of this family, though possessing many sweet notes, are generally marred by an intermixture of harsh tones, and a constant repetition of the same cadence. Many species have great facility for imitation, and constantly introduce the notes and strophes of other birds into their own natural song. All such as inhabit the northern portions of the globe migrate to warmer latitudes at the approach of winter, whilst those that live in southern regions remain throughout the entire year in their native lands. The reason of this difference in their habits is at once explained, if we reflect that the insects upon which they almost exclusively subsist are only found in northern countries during the summer, but are readily obtained in southern climes throughout the entire year. Both sexes assist in the labours attendant on building and incubation. The nest, which is carefully hidden from view, is usually situated in clefts or fissures of rocks and stones, or occasionally in hollow trees and similar situations, and though very rudely constructed externally, is provided with a well-lined interior, for the reception of the little family. The eggs, from four to six in number, are generally of a pale blue colour.

The REDSTARTS (*Ruticilla*) are distinguishable by their slender body, awl-shaped beak, which is furnished with a slight hook at the tip of the upper mandible; slender, delicate feet; high tarsi; moderately long wings and tail, the latter almost straight at its extremity, and lax plumage, which varies considerably according to the age and sex of the bird. The members of this group inhabit the eastern hemisphere (Asia especially being tolerably rich in species), and resemble each other no less in their habits and general disposition than in their general coloration and appearance.

THE BLACK-CAPPED REDSTART.

The BLACK-CAPPED REDSTART (*Ruticilla atra* or *Ruticilla titys*) is black upon the head, the back and lower part of the breast being grey. The belly is whitish, the wings spotted with white; the feathers on the wings, and those that form the tail, with the exception of two in the centre, are yellowish red. Uniform deep grey predominates in the coloration of the female and one year old male, the plumage of the latter being marked with undulating black lines. The length of this species is six, and its breadth ten inches. The wing measures three inches and one-third, and the tail two inches and a half.

The Black-capped Redstart inhabits Europe, and is numerous in such parts of the continent as are rocky or mountainous. In Switzerland it is not uncommon to see these birds not only perching at a very considerable altitude, but disporting themselves over the glaciers and beds of snow. In marshy districts or low-lying valleys they are met with far less frequently, and are much more numerous in the south of Europe than in the northern portions. Though by no means social, this species exhibits but little fear of man, and will take up its abode on the house-tops of a crowded city, apparently quite undisturbed by the noise and bustle of the streets. In disposition it is lively and restless, and from dawn to long after sunset appears to be in a state of constant excitement and activity. Like the Fly-catcher, it seizes its insect prey whilst upon the wing, and performs a great variety of beautiful evolutions, as it alternately soars and sinks through the air. Upon the ground it moves with swiftness and ease, bowing its head repeatedly, and whisking its tail whenever anything happens to attract its particular attention, or when under the influence of emotion. The voice of the Black-capped Redstart, though by no means beautiful, possesses great flexibility, and is capable of imitating the songs of a great variety of other birds.

The nest, which is carelessly constructed of fibres, stalks, and grass, and thickly lined with hair and feathers, is built upon rocks, in holes of walls, under eaves of houses, or in similar situations. Hollow trees are occasionally, but very rarely, employed for this purpose. The eggs have a delicate, glossy, pure white shell, and are usually from five to seven in number. Both parents labour equally in feeding and tending the little family, but upon the female devolves almost the entire work of brooding, the male only relieving her for about two hours at noon. As many as three broods are sometimes produced in the course of a season.

THE GARDEN REDSTART.

The GARDEN REDSTART (*Ruticilla phænicura* or *Phænicura ruticilla*), a common English species, is a very beautiful bird. The sides of its beak, forehead, and throat, are black; the rest of the upper part of the body dark grey. The breast, sides, and tail, are bright rust-red; the part of the head immediately above the brow and the centre of the under side are white. The plumage of the female is dark grey above, and of a lighter shade beneath; her throat is occasionally of a deeper hue. The young are grey, spotted with reddish yellow, on the back; and the feathers on the under side have rust-red borders; the eyes of all are brown, and the beak and feet black. This bird is five inches and a half long, and three broad; the wing measures three, and the tail two inches and a quarter.

The Garden Redstart is an inhabitant of Europe and Asia, from whence it migrates to pass the winter months in the eastern provinces of India or the interior of Africa. In its habits and mode of life it very closely resembles the species last described, with this exception, that it usually perches upon trees. Its sweet song is composed of two or three gentle flute-like cadences. The nest is roughly constructed of dry fibres and grass, and thickly lined with feathers; it is usually situated in a hollow tree, or hole in a wall or rock, such cavities being preferred as have a very narrow entrance. The eggs, from five to eight in number, have a smooth blueish green shell (see Fig. 16, Coloured Plate XVI.), and are laid at the latter end of April. A second brood is produced in June, and, strangely enough, is deposited, not in the nest employed for the first family, but in another, specially prepared for its reception. The pair, however, often return to their first breeding-place the following summer.

The MEADOW WARBLERS (*Pratincola*) are a group of small, stoutly-built birds, with variegated plumage; short, thick, rounded beaks; wings of moderate size; in which the third and fourth quills exceed the rest in length; short tails, composed of slender feathers; and long, thin legs. The members of this group inhabit the eastern hemisphere, and frequent localities overgrown with shrubs or underwood.

THE BROWN-THROATED MEADOW WARBLER.

The BROWN-THROATED MEADOW WARBLER (*Pratincola rubetra*) presents a very variegated appearance, owing to the broad reddish grey border fringing the blackish brown feathers, with which the upper part of its body is covered. The under side is light yellowish white; the chin, a streak over the eyes, and the centre of the wings are pure white. All the colours in the plumage of the female are indistinct; a stripe over the eyes is of a yellowish shade, and the light-coloured spot on the wings very faintly indicated. In the young birds the upper part of the body is a mixture of rust-red and greyish black, striped longitudinally with reddish yellow. The pale red feathers on the under side are diversified with reddish yellow spots, and tipped with greyish black. The eyes of all are deep brown, the beak and feet black. The body is five inches and a half long, and eight broad; the wing measures two inches and a half, and the tail two inches. The habits of this bird so closely resemble those of the following species that one description will serve for both.

THE BLACK-THROATED MEADOW WARBLER.

The BLACK-THROATED MEADOW WARBLER (*Pratincola rubicola*), a species very nearly allied to that above described, is black upon the throat and over the entire upper part of the body; the under side is rust-red; the rump, a spot upon the wings, and the sides of the neck are pure white. The female is greyish black upon the throat and mantle, the feathers of the latter edged with reddish yellow; the entire under side is of the latter hue. Both these birds inhabit the continent of Europe and some portions of Asia, and are often met with in Northern Africa during their winter journeyings. All, however, do not migrate. We are told on good authority that they are seen in Spain and Great Britain throughout the entire year. Everywhere they show a very decided

THE BLACK-THROATED MEADOW WARBLER (*Pratincola rubicola*).

preference for cultivated districts, and especially delight in well-watered pasture-land, or such open fields as are upon the outskirts of woods; indeed, the more fruitful the situation the more numerous do they congregate. Their voice is sweet, full, and capable of producing a great variety of cadences. Like most other members of their family, they sing almost incessantly during the spring and early part of the summer, and are often to be heard far into the night. The nests of both these species is loosely formed of dry leaves, fibres, or grass, mixed with a little moss, lined with some elastic material, such as a layer of horsehair. Grass-meadows are generally selected, as affording situations adapted for building purposes, and the nests are placed with so much care within hollows on the ground, or beneath a low bush that, as frequently happens, the brooding pairs are not discovered, either when the field is mowed, or even when the haymakers have raked the grass from its surface. The eggs, five or six in number, are broad in shape, with delicate, glossy, light blueish green shells, and are laid from May to June. The female alone broods; the eggs are hatched in about a fortnight.

The young are watched and tended with great care, and are saved from many enemies by the prudence of their parents, who, should danger be at hand, remain perfectly silent and motionless until the unwelcome visitor has left the spot. As regards the movements, diet, and habits of these two species, we will only add that in almost every essential particular they resemble those of the Warblers already described.

The CLIPPERS (*Ephthianura*), another group of the same family, met with in New Holland, are recognisable by their nearly straight beak, which is shorter than the head, compressed at the sides, and incised close to the tip. The third and fourth quills of the long wing exceed the rest in length; the tail is short, and straight at its extremity; the legs are long, the tarsi thin, and the



THE WHEATEAR (*Saxicola oenanthe*).

toes slender. We are at present acquainted with but few members of this interesting and probably numerous group.

THE WAGTAIL CLIPPER.

The WAGTAIL CLIPPER (*Ephthianura albifrons*), as the species most frequently met with is called, is deep grey on the upper part of the body, each feather having a dark brown spot in its centre. The wings and tail-feathers are dark brown, the latter, with the exception of those in its centre, decorated with a large, oval, white spot. The fore part of head, face, throat, breast, and belly are pure white. The hinder part of the head and a broad line that passes from the sides of the neck to the upper region of the breast, are black. In the female the mantle is greyish brown; the throat and under side are yellowish white; while the ring about the neck and a light spot on the exterior tail-feathers are only slightly indicated. This species is four inches long. Gould, who first described the Wagtail Clipper, found it upon a small island in Bass's Straits, and afterwards throughout the whole

of Southern Australia. Like its congeners, it is lively and active, and ever watchful against the approach of danger. Like them it selects a stone or leafless branch when about to perch, and if disturbed, flies swiftly for a few hundred yards before it again settles. Its step upon the ground is rapid, and generally accompanied by a whisking motion of the tail. The song of the male is extremely pleasing, and is heard constantly about September or October, when the breeding season commences. The nest is formed of small twigs, grass, lined with hair or some similar material; it is usually concealed beneath shrubs or brushwood, at an elevation of only a few inches from the ground. The eggs, three or sometimes four in number, are of a pure white, adorned with reddish brown spots or markings, most numerous at the broad end. The young are carefully tended by their parents, who, however, often betray the situation of the nest, either by their evident uneasiness at the approach of a stranger, or by affecting lameness or exhaustion, in the hope of turning the attention of an unwelcome visitor from their helpless charge to themselves. Two broods are produced during the season, the first family going forth into the surrounding country till the second batch of nestlings are able to support themselves, when they all join company with the parent birds.

The CHATS (*Saxicolæ*) are slender birds, with awl-shaped beaks, which are very lightly incised on the margin, slightly curved at the tip, and very broad at the base. The tarsi are high and slender, the toes of moderate size, the wings blunt, the tail short, broad, and straight at the extremity. The plumage is rich and lax; it varies considerably in its coloration, but is remarkable from the circumstance that the tail, which is in most instances white, is always of a colour different from the body. These birds are met with extensively in Europe and Asia, and are particularly numerous upon the African continent. We shall, however, confine ourselves to a minute description of but a few species, as the habits of all are very similar.

THE FALLOW CHAT, OR WHEATEAR.

The FALLOW CHAT, or WHEATEAR (*Saxicola ænanthe*), is of a light ash-grey upon the upper part of the body. The breast, brow, and a band over the eyes, are white; the under side and rump reddish yellow; a patch upon the cheek-stripes, the wings, and two centre tail-feathers are black; the rest are white towards the base, and black at the tip. The eye is brown, the beak and feet black. After the moulting season the upper part of the plumage of the male is rust-red, and the under side reddish yellow. In the female reddish grey predominates. The brow and a stripe over the eyes are dirty white, the bridles pale black, the under side light brownish red; the feathers of the wings are dark grey, edged with light yellow. The length of this species is six inches and a quarter, and the breadth eleven inches; the wing measures three inches and a half, and the tail two inches and a quarter; the female is a few lines smaller than her mate. The Wheatear both dwells and breeds in the British Islands, and throughout that portion of Europe that lies between the Alps, Pyrenees, Balkan Mountains, and Lapland; in Asia it is met with in corresponding latitudes; occasionally it appears in the upper provinces of India; we have also seen it ourselves in many parts of Africa. In Southern Europe this bird is replaced by two nearly-related species—

THE EARED STONE CHAT AND BLACK-THROATED STONE CHAT.

The EARED STONE CHAT (*Saxicola aurila*) and the BLACK-THROATED STONE CHAT (*Saxicola stapazina*). The first of these is six inches long, and ten inches and a half broad; the wing measures three inches and a third, and the tail two inches and a half. The plumage on the upper part of the body is whitish grey; that of the under side greyish reddish white; a narrow line that passes from the beak to the eyes, an oval patch on the cheek, the wings, central tail-feathers, and the tips of those

at the exterior are black ; the colours in the plumage of the female are paler and redder than those of her mate. The Black-throated Stone Chat is rust-red on the upper portions of the body, breast, and belly ; the throat and wings are black, the feathers of the single wing-covers edged with rust-red ; the exterior tail-feathers are white, tipped with black, and those in the centre entirely black. The young of both species are greyish yellow on the head, nape, and back, every feather being lightly edged with grey at the tip, and streaked with white on the shaft. The under side is dirty white, with a greyish shade upon the breast ; the quills and tail-feathers are pale black ; the feathers of the wing-covers are bordered with yellowish white.

Though they by no means avoid fruitful tracts or cultivated districts, these birds very decidedly prefer to take up their abode in mountains or stony regions, and are for this reason particularly numerous in Sweden, Southern Germany, and Switzerland ; in the latter country they are popularly known as Mountain Nightingales, from the height to which they often ascend. Even the icy and rugged tracts of Scandinavia and Lapland seem to suit their requirements ; and we have often seen them hopping nimbly over the glaciers, in situations where no other living object was discernible. Individuals inhabiting more southern latitudes display the same liking for barren ground, and are usually seen in localities so sterile and arid as to appear totally incapable of affording them a sufficient supply of the insects upon which they subsist. Their disposition is lively, restless, vigilant, and very unsocial ; only during their winter migrations do they commingle with others of their species. Even when circumstances compel a certain amount of neighbourship, each bird lives for itself, without appearing to take the slightest interest in the proceedings of others in the vicinity.

The flight of the Stone Chat is remarkable, owing to the fact that, at whatever height the perch may be from which it starts, the bird invariably sinks towards the ground, close to the surface of which it always flies, in a series of short, undulating lines. At the approach of the breeding season this mode of flight is changed, and the bird then entertains itself and its mate by repeatedly soaring into the air to a height of some twenty or thirty feet, singing as it goes, and then descending precipitately, to end its joyous song upon its favourite perch. When standing upon a stone or rock, it holds its body erect, shakes its tail, and, should anything unusual catch its eye, at once commences bowing repeatedly. This strange habit has given rise to its Spanish name of the "Sacristan," in allusion to the genuflexions practised by the monks. The voices of all the species we have described are loud and peculiar, but by no means pleasing. Of their performance, however, it may be said that what is wanting in quality is made up by the energy and persistency with which their song is poured out, not only from daybreak to sunset, but long after night has closed in. The nest, which is for the most part built in holes and fissures of rocks and stones, or occasionally in hollow trees, is carefully concealed from view. Its dense roughly-made exterior is formed of fibres, grass, and stalks, lined thickly and warmly with wool, hair, or feathers ; the eggs, from five to seven in number, are of a delicate blueish or greenish white, occasionally, but rarely, spotted with pale yellow. The female hatches her brood with but little assistance from her mate, who perches near, in order to keep a strict watch against the approach of danger, and warns her of its appearance by an anxious cry. But one brood is produced in the season, the first eggs being laid about May ; occasionally, however, the female produces two broods. The young remain with the parents till the winter migration, which takes place in September. In March they again return to their native lands.

The RUNNING WARBLERS (*Dromolea*) constitute another group of this family, recognisable by the predominance of black in the coloration of their plumage, and by the formation of their comparatively long and much compressed beak, which is broad at its base, and very decidedly curved and hooked at its extremity. The wings are long and pointed.

THE WHITE-TAILED WHEATEAR.

The WHITE-TAILED WHEATEAR (*Dromolæa-Saxicola-leucura*) is about seven inches and a quarter long, and eleven and three-quarters broad; the wing measures three inches and two-thirds, and the tail two inches and three-quarters. The plumage is of an uniform rich black; the wing-quills are grey towards their roots, and a band of dazzling white adorns the extremity of the tail. The female is deep brown, but similar to her mate in appearance. The young male and female respectively resemble the father and mother, but are paler. This species inhabits Southern Europe, and almost invariably resorts to its most mountainous districts. In Spain it is particularly numerous, and is also frequently seen in Southern Italy, Greece, and North-western Africa. In the latter portion of the

THE EARED STONE CHAT (*Saxicola aurita*).

globe and in Asia it is replaced by several nearly allied species. In all these various regions it shows a decided preference for barren heights and rocky precipices, and is as constantly met with on rugged peaks, at an altitude of 500 feet above the sea, as upon the masses of dislodged stone that strew the declivities of the mountains. The darker the colour of the rock, the more dreary and desolate the situation, the more attractive it appears to be, as the blackness of the stone accords well with the dusky plumage of the birds, and renders concealment comparatively easy.

Those who have ventured to scale the rugged heights and steep precipices frequented by these birds, are often startled by the sound of their clear, sweet voices, as they suddenly salute the ear in situations apparently destitute of animal life, whilst those whose patience will permit them to follow the sound until they come to the spot upon which a pair have taken up their abode, will behold a performance that richly repays the trouble of a tedious climb. Upon a ledge or platform of rock he will see the male bird either tripping lightly around the open space, or executing a regular

dance, with wings and tail outspread, accompanying the movements of his feet and body with a continuous flow of song, and bowing his head repeatedly: this entertainment being varied by rising suddenly into the air, and sinking again rapidly, with open pinions, to the ground. Upon one occasion, whilst journeying over the Sierra de los Anches, we came upon a pair of these birds, seated near to a nest containing their unfledged young. The terrified female immediately began flitting from rock to rock, while her mate at once commenced dancing, tripping gracefully about, and singing with all his power, as though with the idea of riveting our attention on himself, and thus averting danger from his little family. We could not find it in our hearts to render the wily stratagem abortive, so contented ourselves with a hasty glance at the nest, and left the spot, followed by a loud song of triumph and rejoicing from the anxious father. The nest, which is placed in holes in the rock, is not



THE STONE THRUSH, OR ROCK WAGTAIL (*Petrocincla-Turdus-saxatilis*).

commenced until the end of April or beginning of May. The exterior is formed of fibres and grass, woven firmly together, the interior being carefully lined with a layer of goats' hair. The eggs are of a pale greenish blue, marked violet or reddish, but their pattern is very variable; they are from four to six in number: in Spain we have occasionally found as many as seven in a brood. The young are reared upon insects, and are no sooner fledged than they may be seen perching upon the rocks or stones, watching their parents as they pursue flies or other insects destined to fill their craving beaks. Meanwhile, should any unusual sight or sound attract the attention of the vigilant father, he instantly warns his brood by a peculiar cry that they must at once seek shelter in the neighbouring holes and fissures, and recalls them with the same note when they may again venture forth. It is only after the moulting season, which continues throughout July, August, and September, that the young withdraw themselves from the protection of their parents, in order to seek a mate and begin life on their own account.

The STONE THRUSHES, or ROCK WAGTAILS (*Petrocincla*), are comparatively large birds, recognisable by their slender body and strong, awl-shaped beak, which is broad at its base; the upper mandible is slightly arched, and curved at its tip; the tarsi are armed with very decidedly bent claws; the wing is long, its third quill exceeding the rest in length, while the tail is short, and almost straight at its extremity. The plumage is smooth, bright-tinted, and sometimes much variegated.

THE STONE THRUSH, OR ROCK WAGTAIL.

The STONE THRUSH, or ROCK WAGTAIL (*Petrocincla-Turdus-saxatilis*), is a magnificently-coloured bird, about eight inches long and fourteen broad. The head, face, part of the throat, nape, and rump are of a beautiful blueish grey, the entire under side is bright rust-red, the quills are blackish brown, the shoulder-feathers deep grey or slaty black; the two centre tail-feathers are dark grey, and those at the exterior rust-red. In autumn all the small feathers have light edges. The female is of a pale brown, spotted with a still lighter shade on the upper part of the body, whilst the rust-red feathers on the under side are darkly bordered: the throat is white. In both sexes the eyes are reddish brown, the beak pale black, and the feet of a reddish hue; the young resemble the mother. These birds frequent all the mountain regions of Southern Europe, but are also known to breed in some part of Austria, in the Tyrol, along the course of the Rhine, and occasionally in Bohemia and in the Hartz Mountains: in Italy and Greece they are especially numerous, and everywhere appear to prefer the rocky valleys lying immediately at the foot of mountain ranges to the precipices or towering heights occupied by the group last described.

The Rock Wagtails generally appear in Europe about April or May, and almost immediately commence their preparations for breeding. Their nests, usually concealed with great cunning in such holes in the rock or ground as are almost inaccessible, are made of twigs, straw, moss, or grass, heaped roughly together to form the outer wall, the cup-shaped interior being neatly lined with a variety of elastic materials, selected with great care. The delicate blueish green eggs (see Fig. 24, Coloured Plate IV.) are from four to six in number. We have not as yet been able to ascertain whether the male relieves his partner in the work of incubation, or contents himself with amusing her by a kind of dance, performed with ruffled streaming plumage and half-closed eyes, in which he delights to indulge at this season of the year. Both parents, however, assist in tending the young flock, who are reared on the same kinds of insects as form the staple food of the adults; the latter also devour snails and worms, and during the autumn consume large quantities of berries and fruit, including grapes. Their winter migrations take place in September, and often extend over a large portion of Northern Africa; indeed, we have often seen them in the vicinity of the Blue River. In disposition the Rock Wagtail is cautious, sprightly, and restless, passing almost the entire day in active exercise; its flight is extremely light and beautiful, and so rapid as to enable it to seize an insect on the wing; unlike most of the members of its family, it generally flies in a direct line, and, after describing a few circles in the air, hovers awhile before perching. Upon the ground its movements alternate between a tripping step, accompanied by repeated bowings of the head, and the dancing movement alluded to above. Its voice is pleasing, flute-like, and capable of imitating a great variety of notes and sounds; it is for this reason unusually attractive when caged. Count Gourcy tells us that it soon becomes so tame as to greet its master with a song, and testifies its affection by a variety of pretty tricks.

We must not omit to mention one strange propensity to which this species is addicted when in captivity, during the season at which its kind usually migrate. At that time of the year it seems seized with attacks of perfect frenzy, rushes round its cage, leaps about, and utterly refuses to take any food that is not forced upon it. This state of excitement only continues for from eight to ten

days, and leaves the bird in its ordinary state of health. Throughout the whole course of the attack the little prisoner exhibits a degree of terror which is quite inexplicable, at sights and sounds that at other times would scarcely attract its attention.

THE BLUE ROCK WAGTAIL, OR BLUE THRUSH.

The BLUE ROCK WAGTAIL, or BLUE THRUSH (*Petrocincla cyana*), is rather larger than the species last mentioned, being from eight inches and three-quarters to nine inches and a half long, and fourteen broad; the wing measures five and the tail three inches and a half. The plumage of the male is of an uniform greyish blue, and the quills and tail-feathers edged with blue. The female is blueish grey upon the upper part of the body, the throat being decorated with light reddish brown spots, each of which is surrounded by a dark line; the feathers on the under side are edged with brownish white, and marked with dark brown crescent-shaped patches; the quills and tail-feathers are also dark brown. The nestlings resemble the mother, but have light brown spots upon the back; the eyes of all are brown, and the beak and feet black. After the moulting season all the feathers in the plumage of the male are of an uniform greyish blue, and the quills and tail-feathers edged with blue.

The Blue Thrushes inhabit the whole of Southern Europe, Northern Africa, and a portion of Central Asia, and are especially numerous in Greece, Dalmatia, Italy, the South of France, Spain, Egypt, and Algiers; during winter a few are occasionally seen in India, but these, no doubt, are stragglers that have lost their way, as, for the most part, these birds remain throughout the entire year in their native land. Like the species last described, they principally occupy rocky valleys and mountainous regions, but are also often to be seen about towns and villages, where they perch upon steeples, roofs, or lofty walls; in Egypt they frequently dwell within the ruins of ancient temples. Although sprightly and active, they are remarkably unsocial, and exhibit a positive dislike to the society not only of man and of birds in general, but of their own kind. During the period of incubation alone do they associate even in pairs; at other seasons each leads an entirely independent life, and exhibits active hostility to every other member of the feathered creation. The flight of this species is much more continuous than that of its congeners, and it usually hovers before perching: like the Thrush, it often soars into the air when about to pour forth its song. Upon the ground it moves with great ease and rapidity. The voice of the Blue Thrush, though inferior to that of the Rock Wagtail, is pleasing, and so flexible as readily to imitate the notes of other birds. The evolutions performed by the male for the delectation of his mate are even more comical than those indulged in by the *Petrocincla saxatilis*, as the little creature inflates his body until it is almost as round as a ball, bows his head, and continually brandishes his tail aloft whilst engaged in going through his dancing steps. The nest is situated in holes in rocks, walls, and ruins, or upon lofty towers or steeples, and is rudely formed of grass; nevertheless, its flat interior is neatly lined with fibres. The four oval-shaped eggs which compose a brood are laid at the beginning of May. These are of a glossy, greenish blue, faintly spotted with violet-grey, and more distinctly with reddish brown; unspotted eggs are also occasionally laid. In Italy, Malta, and Greece, the Blue Thrush is especially esteemed as a domestic favourite, and commands a high price. Wright tells us that in Malta particularly, from fifteen to twenty dollars are frequently paid for a good singer, and that as high a sum as fifty dollars has been given for an unusually gifted specimen. In Malta, such of the lower orders as keep these birds fasten a piece of red cloth to the cage, in order to protect its inmate from the much-dreaded evil eye. Owing to the extreme care with which the nests are concealed, and the unusual timidity displayed by this species, its capture is attended with great difficulty; indeed, none but the most wary and patient of sportsmen can hope to obtain an adult bird.

THE BUSH WARBLER.

The BUSH WARBLER (*Thamnodæa albiscapulata*), an inhabitant of the Abyssinian mountains, possesses a short, decidedly curved beak, slightly pointed wings, in which the fourth quill exceeds the rest in length, a comparatively long and rounded tail, and short feet; its length is eight inches, and its breadth one foot and three-quarters of an inch. The wing measures four inches and one-third, and the tail three inches and three-quarters. The plumage of the male is of a blueish black upon the head, throat, and upper part of the breast, back, wings, tail, and legs; the belly and

THE BUSH WARBLER (*Thamnodæa albiscapulata*).

lower breast are bright rust-red; a band that divides the upper and lower parts of the breast, and the feathers on the small wing-covers are snow-white; the tail-feathers are rust-red on both sides, and tipped with black. The females and young are without the white patches on the breast and wings.

We had many opportunities of observing these birds at Habesch, and saw them constantly in the neighbouring mountains. They lived almost invariably in pairs, and frequented rocks, stones, trees, or the surface of the ground, with equal impartiality. Upon the rocks they conduct themselves after the manner of the Stone Thrush: whilst sporting upon the trees, they hang from the trunk, as they search the bark for grubs, or perch on the very topmost bough, and pour forth their clear and joyous song. We were unable to make any observations respecting their breeding and nidification.

The THRUSHES (*Turdi*) constitute a very numerous family, whose various members are spread over the whole surface of our globe. These birds closely resemble each other in form and habits, although they differ considerably in size; for whilst some have the dimensions of a Pigeon, the smaller species are no larger than the Warblers we have just described. All have more or less slenderly-formed bodies; the beak is almost straight, and of moderate length, slightly curved along the culmen of the upper mandible, and incised at its tip; the tarsus is slender, and, like the toes, of medium size; the claws, on the contrary, are large. The wings, in which the third and fourth quills exceed the rest in length, are long and pointed; the tail is generally moderately long, and either quite straight, or slightly rounded at its extremity. The plumage is soft, somewhat lax, and very various in its coloration; the sexes are usually similar in appearance, and the young are adorned with spots.

Our space forbids our entering into a particular account of all the European Thrushes, and we can therefore only describe a few of those most commonly known. Of the eighty-one species with which we are acquainted, two inhabit the northern tracts of our globe, whilst fifteen are met with in India and the adjacent countries. There are nine in Africa, five in Australia, and twenty-seven in South America. Of these, the RED-WINGED THRUSH (*Turdus fuscatus*), the RED-THROATED THRUSH (*Turdus ruficollis*), the PALE THRUSH (*Turdus pallens*), the SIBERIAN THRUSH (*Turdus Sibericus*), the WANDERING THRUSH (*Turdus migratorius*), the HERMIT THRUSH (*Turdus solitarius*), WILSON'S THRUSH (*Turdus Wilsoni*), SWAINSON'S THRUSH (*Turdus Swainsoni*), DWARF THRUSH (*Turdus minor*), the SOFT-FEATHERED THRUSH (*Turdus mollissimus*), the BLACK-THROATED THRUSH (*Turdus atrogularis*), and the GROUND THRUSH (*Turdus varius*) are all met with in Europe; the four first-mentioned of these thirteen species come from Siberia, the next in order from North America, the two last but one from Southern Asia, and the GROUND THRUSH (*Turdus varius*) from Australia. The members of this family inhabit every variety of climate, and make their home indifferently within the depths of tropical forests, or under the shelter of the pines and firs that frequently skirt the glaciers of mountain ranges, amidst the rich woodland pastures that adorn highly-cultivated tracts, or upon the sparsely scattered shrubs that draw their scanty means of existence from the burning sands or arid soil of vast steppes. Some few species remain during the entire year within the limits of their native lands, while by far the greater number exhibit such a propensity for wandering about to see the world as is almost without a parallel in the whole feathered creation. All are eminently endowed, and lively and active in their disposition; their flight is remarkably swift, but varies considerably in the different species; that of the Song, Red, and Ring Thrushes being the swiftest and most graceful, whilst that of the Missel and Black Thrushes is very feeble, owing to the comparative shortness of their pinions. All, however, are equally adroit in hopping over the surface of the ground, or climbing amid the trees, and they are all capable of springing with remarkable facility, aided by their wings, to a distant branch. Their sight is so keen as to enable them to detect the smallest insect at a great distance; and their sense of hearing so delicate as to warn them of the approach of danger long before it has been perceived by the other inhabitants of their native woods, who at once seek safe shelter when they hear the warning cry of their more acute and vigilant companions. To this superior sagacity is no doubt attributable the eager desire exhibited by Thrushes to investigate any new or striking object: they, however, take good care to keep at a safe and respectful distance, even while carrying on their examination with the most eager attention. Although extremely quarrelsome—we might almost say vicious—in temperament, the members of this family are eminently social, and constantly assemble in large parties, comprising not only those of their own race, but a variety of other birds. Towards man they appear to feel but little attraction, and are quite acute enough readily to distinguish friends from enemies. As regards their vocal

powers, the different groups are somewhat unequally endowed, though the notes of all are in many respects very similar. The song of the "Nightingale of the North," as the Singing Thrush is called in Norway, must certainly be regarded as excelling that of any other species; whilst that of the Missel and Juniper Thrush are also remarkable for great sweetness and variety of tone; of the Hermit Thrush (*Turdus solitarius*) Audubon speaks with great enthusiasm.

Unlike most other birds, the Thrushes do not accompany their notes with any description of movement or gesticulation, but sit perfectly quiet and almost motionless during the whole song; one male has no sooner perched himself on a conspicuous branch, and commenced singing, than he is answered by all those in the neighbourhood, as they hurry to the spot to join in the performance, and share the admiration they evidently expect it will excite. Insects, snails, and worms afford them the means of sustenance during the summer, these being principally obtained from the surface of the ground; they also greedily devour berries, some preferring one sort and some another. Thus the Missel Thrush constantly seeks the fruit of the mistletoe, and for this reason is popularly supposed to bear its seeds from one spot to another; while the Ring Thrush consumes whortleberries in such quantities after the breeding season that, according to Schauer, its flesh acquires a blue, and its bones a red tinge. This very decided predilection for particular fruits and berries renders these birds very troublesome in vineyards and orchards, and brings down upon them severe retribution at certain seasons of the year.

Such groups as inhabit the north rarely commence breeding before June, whilst others usually lay within a very short time after their return to their native lands. The situations of the nest also vary considerably, according to the localities in which they are built.

THE MISSEL THRUSH.

The MISSEL THRUSH (*Turdus viscivorus*) is about ten inches long, and from sixteen inches and a half to seventeen and a half broad; its wing measures from five inches and a half to five inches and three-quarters, and the tail from four inches to four inches and a quarter. Upon the upper part of the body the feathers are deep grey, the under side is whitish, marked on the throat with triangular, and on the other portions with kidney-shaped brownish black spots; the quills and tail are brownish grey, bordered with greyish yellow; the eye is brown, the beak dark, and the feet light horn-colour. The female resembles her mate, but is somewhat smaller; the feathers on the under side of the young are spotted with black, and the wing-covers bordered with yellow. This species is found throughout the entire continent of Europe, and is numerous met with in Great Britain. In Wales it is popularly known as "Penn-y-llwya," or "Master of the Coppice," on account of the overbearing and quarrelsome disposition it displays. In England it is often called the "Storm Thrush," from the fact that its voice is constantly to be heard before a storm of wind or rain. Such of these birds as inhabit the most northern portions of our continent wander somewhat further south as winter approaches, whilst those that occupy more genial latitudes remain throughout the entire year in their native lands. Some few are occasionally known to stray as far as North-western Africa. Districts abounding in lofty trees or pine and fir forests are the localities they prefer. The nest is formed of moss, stalks, lichens, and grass; the outer wall being frequently coated with a layer of mud, and the interior neatly lined with fine grass and similar materials. (The egg is represented in Fig. 12, Coloured Plate XVI.)

The voice of the Missel Thrush resembles that of the Blackbird. "The male," says Mudie, "is not a mere idle songster; he is equally vigilant and bold in the defence of his family. The call-note he utters in case of danger—and which is answered by the female as if she were expressing her confidence of safety while he is on the watch—is harsh, grating, and has the tone of a note of

defiance. With the Missel Thrush this defiance is no idle boast, for the sneaking Magpie, the light-winged Kestrel, and even the Sparrow Hawk, are at those times compelled to keep their distance, as the Thrush is too vigilant to be taken by surprise, and under the sprays where these birds contend with him on equal terms he keeps them all at bay. Nor is he the guardian of his own family only—he is in some measure the warder of the whole grove, and when the harsh but shrill sound of his bugle-note of alarm is heard, all the warblers take heed of the danger, and the chorus is mute until he again mounts the highest branch and raises the song of thankfulness for deliverance.”

THE SONG THRUSH.

The SONG THRUSH (*Turdus musicus*) is considerably smaller than the Missel Thrush, its length being eight inches and a half, and its breadth twelve and three-quarters; its wing measures four inches and one-sixth, and its tail three inches and a quarter. The upper portion of the body is olive-grey, the under side yellowish white, marked with triangular oval brown spots, which are less numerous on the belly than in the species above described; the lower wing-covers are also palish yellow, instead of white, and the feathers on the upper covers tipped with dirty reddish yellow. The sexes differ only in their size; the young are recognisable by the yellowish streaks and brown spots on the tips of the feathers of the upper part of their body. Like the Missel Thrush, this species inhabits the whole of Europe, being, however, especially numerous in its extreme north, and rarely breeding in the most southern portions of the continent, which are usually only visited during the winter months; it is also frequently met with in China, and during its migrations wanders as far as North-western Africa, but is rarely seen in the north-eastern provinces of that continent. Notwithstanding the very quarrelsome disposition usually displayed by these birds, many interesting anecdotes have been recorded concerning the great affection they display towards each other. Amongst these Yarrell mentions a touching instance, related by Mr. Knapp:—“We observed,” says the latter, “two common Thrushes frequenting the shrubs on the green in our garden; from the slenderness of their forms and the freshness of their plumage, we pronounced them to be birds of the preceding summer. There was an association of friendship between them that called attention to their actions. One of them seemed ailing or feeble from some bodily accident, for, though it hopped about, it appeared unable to obtain a sufficiency of food. Its companion, an active, sprightly Thrush, would frequently bring it worms or bruised snails, when they mutually partook of the banquet; the ailing bird would then wait patiently, understand the actions, and expect the assistance of the other, and advance from his asylum on its approach. This procedure was continued for some days, but after a time we missed the fostered invalid, which probably died, or, by reason of its weakness, met with some fatal accident.” (The egg of the Song Thrush is shown in Fig. 14, Coloured Plate XVI.)

THE FIELDFARE, OR JUNIPER THRUSH.

The FIELDFARE, or JUNIPER THRUSH (*Turdus pilaris*), is ten inches long and sixteen and a half broad; the wing measures five and a half and the tail about four inches. The plumage of this species is unusually variegated: the head, nape, and rump are deep grey; the upper part of the back and region of the shoulder dull chestnut-brown; the quills and tail-feathers black, the former and the feathers of the wing-covers being grey upon the outer web and tip; the exterior tail-feathers are bordered with white; the front of the throat is dark reddish yellow, spotted longitudinally with black; the feathers on the breast are brown, with a whitish edge; the rest of the under side is quite white; the eye is brown, the beak yellow, and the foot dark brown. The female is somewhat paler than her mate.

These birds mostly live and breed in the extensive birch forests that abound in Northern Europe, and usually make their appearance in the central portions of that continent late in the autumn, rarely wandering as far as its extreme south. They generally appear in Great Britain in large flocks about March, when, should the season permit, they at once spread themselves over the fields in every direction in search of insects, or if these have all disappeared, seek the berries that constitute their principal food in our hedges and gardens. But should the weather prove so exceptionally cold as to deprive them of the latter means of support, they are compelled to wander still farther south, returning, however, to Great Britain again before the end of the winter. Under ordinary circumstances, they remain with us till May, and have occasionally been known to breed in Yorkshire, Kent, and some parts of Scotland. Mr. Hewitson thus describes the habits of the



THE SONG THRUSH (*Turdus musicus*).

Fieldfare when preparing its nest:—"After a long ramble through some very thick woods, our attention was attracted by the harsh cries of several birds, which we at first supposed to be Shrikes, but which afterwards proved to be Fieldfares. We were soon delighted by the discovery of several of their nests, and were surprised to find them—so contrary to the habits of other species of the genus *Turdus* with which we are acquainted—breeding in society. Their nests were at various heights from the ground, from four feet to thirty or forty feet, or upwards; they were for the most part placed against the trunk of the spruce fir; some were, however, at a considerable distance from it, upon the upper surface, and towards the smaller end of the thicker branches: they resemble most nearly those of the Ring Ouzel; the outside is composed of sticks and coarse grass and weeds, gathered wet, matted with a small quantity of clay, and lined with a thick bed of fine dry grass. None of them as yet contained more than three eggs, although we afterwards found that five was



FIELDFARES.

more commonly the number than four, and that even six was very frequent. The eggs are very similar to those of the Blackbird, and still more to those of the Ring Ouzel."

THE REDWING.

The REDWING (*Turdus iliacus*) is eight inches and a half long and thirteen and a half broad. Its wing measures four and a half, and tail three and a half inches. Upon the upper part of the body the plumage is of a greenish brown, the under side whitish, the sides of the breast bright rust-red, and the throat yellowish, marked all over with triangular and round dark brown spots. The female is of a lighter colour than her mate. The back of the young is greenish, spotted with yellow, and their lower wing-covers rust-red; the eyes of all are reddish brown; the beak black, except at the base of the lower mandible, which is grey; the foot is of a reddish hue. This species is also an



THE REDWING (*Turdus iliacus*).

inhabitant of Northern Europe, but usually appears in the more southern portions of the continent at the close of autumn. Its winter migration extends as far as Northern Africa; it is also met with in Asia, but has never, we believe, been seen in an easterly direction beyond Irkutsk.

It generally arrives in Great Britain about October, appearing in large flocks; and great numbers frequently perish, should the winter be extremely severe. "The Redwings," says Yarrell, in his excellent "History of British Birds," "are much less inclined to feed on berries than most of the other species of this genus, and should the resources obtained by their search on the ground be closed against them by long-continued frost and snow, the Redwings are first to suffer. During such severe seasons as in 1799, 1814, and 1822, hundreds have been found almost starved, alike unable to prosecute their journey south to more congenial countries, or to bear the rigour of this." Whether such mortality resulted from the intensity of the cold, or the long continuance of snow upon the ground, may be matter for speculation.

THE RING OUZEL, OR RING THRUSH.

The RING OUZEL, or RING THRUSH (*Turdus torquatus*), is ten inches long and sixteen broad, the wing measures five and a half, and the tail more than four inches. The plumage of the male, with the exception of a broad, crescent-shaped, white spot upon the breast, is of a pure black, marked with faint crescent-shaped spots, formed by the light edges of the feathers; the quills and wing-covers are shaded with grey, and bordered with brownish grey; the tail is of an uniform brownish black, with the exception of its two exterior feathers, which are surrounded by a delicate line of greyish white. The female is greyer than her mate; all the borders to the feathers are broader; moreover, the crescent on her breast is only slightly indicated, and of a dull grey hue. The feathers upon the back of the young bird are dark, with a light edge, and partially streaked with light reddish yellow on the shafts; the throat is pale reddish yellow, spotted with a deeper shade; the breast, which is of a reddish hue, is marked with round spots, whilst those upon the greyish yellow belly are crescent-shaped. The eye is brown, the base of the lower mandible reddish yellow, the rest of the beak black; the foot is blackish brown. The Ring Thrush principally frequents the highest mountain ranges of Europe, but it is met with throughout the highland countries during its migrations, and often wanders as far as the Atlas Mountains. This species has been classed by some ornithologists as the representative of a separate group, under the name of *Thoracocinela*, but, in our own opinion, it can only be regarded as a connecting link between the Thrushes and Blackbirds. (The egg of the Ring Ouzel is represented in Fig. 15, Coloured Plate XVI.)

This species arrives in Great Britain about April, and is not common. Mr. Mudie informs us that cold moors, stony places, where a good deal of water falls, and where there are springs and lakes, are the nesting ground of the Ring Ouzel. When startled by anyone coming suddenly upon them, they utter the same alarm-note as the Blackbird. Their short sweet song resembles that of the Missel Thrush, and is given forth from some low rock, or elevated stone. The nest varies a little with the situation. A plant or bush, especially if against a bank, usually has the preference; but a tuft of grass or heath, or even the projecting part of a massy stone, is often employed. The nest is formed of moss and lichen, plastered with mud, and lined with dry soft grass. The eggs are four, rarely six in number, about the size of those of the Blackbird, but rather greener in tint, and the spots more decidedly marked.

THE BLACKBIRD.

The BLACKBIRD, BLACK THRUSH, or MERLE (*Turdus merula*), differs from the species above described in the comparative shortness of its blunt-shaped wings (in which the third, fourth, and fifth quills are nearly of equal length), and still more decidedly in its mode of life. Its length varies from nine and three-quarters to ten inches, and its breadth from thirteen and a half to fourteen inches; the wing measures from four inches and one-third to four and a half, and the tail four and a half inches. The plumage of the adult male is of an uniform black, the eye brown, the beak and edges of the eyelid bright yellow, and the legs dark brown; in the adult female the upper part of the body is pure black, the under side blackish grey, edged with light grey; the throat and upper part of the breast are greyish black, but spotted with white and rust-red; the young are blackish brown upon the back, spotted with yellow upon the shafts, and rust-red, spotted with brown on the under side.

The Blackbird is met with extensively from sixty-six degrees north latitude throughout the whole of Southern Europe, and is a permanent resident in Great Britain. Everywhere it frequents moist and well-wooded districts or tracts of underwood, usually remaining from year's end to year's end within the limits of its native land. Only such as reside in the extreme north of the continent migrate, and then rarely beyond the southern parts of Sweden. "The Blackbirds," says Mr. Yarrell,

“occupy hedges, thickets, plantations, and woods. They are shy, vigilant, and restless, frequenting the ground under cover of evergreens and other shrubs, that serve to conceal them, and, if disturbed, take wing with a vociferous chattering of alarm, and, after a short flight, turn suddenly into some thick brake or hedgerow to avoid pursuit. The food of the Blackbird varies considerably with the season; in the spring and early part of the summer it consists of the larvæ of insects, with worms and snails; the shells of the latter being dexterously broken against a stone, to get at the soft body within.



THE BLACKBIRD (*Turdus merula*).

As the season advances they exhibit their great partiality for fruit of various sorts, and their frequent visits to our orchards bring upon them the vengeance of the gardener. This bird commences his song early in the spring, and it has been observed that he occasionally sings his best during an April shower. He continues singing at intervals during the summer till the moulting season. Like some other birds gifted with great powers of voice the Blackbird is an imitator of the sounds made by others. He has been heard closely to imitate part of the song of the Nightingale, and three or four instances are recorded of his having been known to crow like a cock, apparently enjoying the sound of the responses made by the fowls in a neighbouring poultry-yard.” Mr. Neville Wood mentions an

instance in which he heard a Blackbird cackle as a hen does after laying. This species pairs and breeds very early in the spring, generally choosing the centre of some thick bush in which to fix and conceal the nest. The exterior is formed of coarse roots and strong bents of grass, plastered over and interlaced with dirt on the inner surface, thus forming a stiff wall; it is then lined with fine grass. The eggs are four or five, sometimes six in number, of a light blue, speckled and spotted with pale reddish brown (see Fig. 13, Coloured Plate XVI.) Occasionally they are of an uniform blue shade. Their length is one inch and two lines, and their breadth eight lines. The first brood is hatched by the end of March, or early in April.

The MOCKING THRUSHES (*Mimi*) constitute a family nearly allied to the birds above



THE MOCKING BIRD (*Mimus polyglottus*).

described. They are recognisable by their slender bodies, and short but strong wings, that only extend as far as the base of the long tail, and have the third, fourth, and fifth quills of equal length. The exterior tail-feathers are graduated, the tarsi high, the feet large and powerful, and the claws comparatively weak. The beak somewhat resembles that of the True Thrush, but is much higher and more arched; the plumage, moreover, is unusually soft and lax. Unlike the True Thrushes, the members of this group do not prefer forests or woodlands, but frequent open tracts, marshy districts, or even the sea-coast; and while some seek the retirement of the most isolated situations, others make their home close to the dwellings of man. Such species as inhabit the southern portions of the western hemisphere do not migrate, whilst those from the north, when winter approaches, wander southward as far as the United States or even Central America. All American writers speak with enthusiasm of the song of these birds; and though we are by no means inclined to allow them the

superiority over their European cousins that has been claimed for them, still we are fully prepared to acknowledge that their vocal powers are eminently fascinating and remarkable.

THE MIMIC THRUSH.

The MIMIC THRUSH, or MOCKING BIRD (*Mimus polyglottus*), as the most celebrated species has been called, is nine and a half inches long and thirteen and a half broad ; the plumage on the upper part of the body is dark grey, shaded with brown upon the brow and side of the head ; the under side is brownish white ; the quills and wing-covers are brownish black, and the feet dark brown. The female is browner and darker than her mate, and the white in the tail less pure. Both sexes are alike in size.

The United States of North America must be regarded as the native land of this interesting bird, and from thence, as autumn approaches, it wanders forth to visit the surrounding countries. (The Mocking Birds of Louisiana, however, form an exception to this rule, as, owing to the mildness of the climate, they often remain there throughout the entire year.) This delightful songster generally frequents plantations, gardens, and brushwood, and not only lives but breeds in the immediate vicinity of man ; it also prefers sandy plains, the banks of rivers, and the neighbourhood of the sea-coast. On the ground its movements resemble those of the True Thrush, but its flight is undulating, and rarely sustained for any great distance, as the Mocking Bird from time to time takes rest upon a tree before proceeding on its way ; moreover, as it flies, the tail is alternately expanded and closed. As regards the wonderful powers of song that have rendered this species so famous, we cannot do better than quote the words of Wilson :—“The intelligence he displays in listening and laying up lessons from almost every species of the feathered creation within his hearing is really surprising, and marks the peculiarity of his genius. To his other endowments we may add that of a voice full, strong, and musical, and capable of every modulation, from the clear mellow tones of the Wood Thrush to the savage scream of the Bald Eagle. While in measure and accent he faithfully follows his originals, in force and sweetness of expression he greatly improves upon them. In his native groves, mounted on the top of a tall bush, or half-grown tree, in the dawn of dewy morning, when the woods are already vocal with a multitude of warblers, his admirable song rises pre-eminent over every competitor. The ear can listen to his music alone, to which that of all others seems a mere accompaniment. Neither is his strain altogether imitative. His own native notes, which are easily distinguishable by such as are well acquainted with those of our various song birds, are bold, full, and varied, seemingly beyond all limits. They consist of short expressions of two, three, or at most five or six syllables, generally interspersed with imitations, all of them uttered with great emphasis and rapidity, and continued with undiminished ardour for half an hour or an hour at a time. His expanded wings and tail, glistening with white, and the buoyant gaiety of his action, arrest the eye as his song most irresistibly does the ear ; sometimes he sweeps round with enthusiastic ecstasy, mounting and descending as his song swells or dies away, and, as my friend Mr. Bartram has beautifully expressed it, ‘He bounds aloft with the celerity of an arrow, as if to recover or recall his very soul expired in the last elevated strain.’

“While thus exerting himself, a bystander destitute of sight would suppose that the whole feathered tribe had assembled together on a trial of skill, each striving to produce his utmost effect, so perfect are his imitations. He many times deceives the sportsman, and sends him in search of birds that perhaps are not within miles of him, but whose notes he exactly imitates ; even birds themselves are frequently imposed on by this admirable mimic, and are decoyed by the fancied calls of their mates ; or dive with precipitation into the depth of thickets, at a scream of what they suppose to be the Sparrow Hawk.”

As may readily be imagined, the sounds imitated by these remarkable birds vary according to the situation in which they live; those that occupy woodland districts naturally repeat the note uttered by their feathered companions, whilst those near a farmyard learn not only to imitate the cries of all its different inhabitants, but reproduce them so perfectly as to deceive the nicest ear. Thus they have been known to summon the house-dog, by whistling like his master; drive a hen to a state of the utmost excitement, by constantly screaming out in such a manner as to lead her to suppose that one of her chicks was in the last agonies; or to scare away a whole flock of poultry by the perfection with which they imitate the cry of one of the many tyrants of the air. The clapping of a mill, a creaking door, the grating of a saw, or, indeed, any of the multitudinous noises heard in a busy household, at once attract their attention, and are simulated with such torturing exactness as often to render the Mocking Bird, when caged, almost unbearable.

Amongst the many enemies to whose attacks this species is exposed, the black snake is one of the most formidable, and frequent and terrible are the battles that ensue between these apparently very unequal combatants.

"Whenever," says Wilson, "the insidious approaches of this reptile are discovered, the male darts upon it with the rapidity of an arrow, dexterously eluding its bite, and striking it violently and incessantly about the head, where it is very vulnerable. The snake soon becomes sensible of its danger, and seeks to escape; but the intrepid defender of his young redoubles his exertions, and, unless his antagonist be of great magnitude, often succeeds in destroying him. All its pretended powers of fascination avail it nothing against the vengeance of this noble bird. As the snake's strength begins to flag, the Mocking Bird seizes and partially lifts it up from the ground, beating it with his wings; and when the business is completed he returns to the repository of his young, mounts the summit of the bush, and pours out a torrent of song in token of victory."

In the southern provinces of the United States the breeding season of this Thrush commences in April, whilst in the northern parts, on the contrary, it does not begin till the end of May. Throughout the whole of this period the male is extremely restless, and endeavours to attract the attention of his mate by the ceaseless activity of his movements, alternately strutting conceitedly about on the ground, with tail expanded and drooping wings, or fluttering, butterfly-like, around the spot on which she is perched, at the same time performing a series of graceful evolutions in the air. The nest, which is formed of dry twigs, tendrils, grass, and wool, thickly lined with delicate fibres, is usually placed at the summit of trees or leafy shrubs, frequently close to habitations, but occasionally also in low bushes and briary clumps growing in comparatively unfrequented and uncultivated spots. Two and sometimes three broods are produced in the year; the first containing from four to six, the second at most five, and the third seldom more than three eggs. These are round in shape, of a light green colour, variously marked with dark brown. The young are hatched by the mother alone, and usually leave the shell in about a fortnight. The two first families grow rapidly, but they do not attain their full size until late in the year. Audubon maintains that, should the parents be disturbed whilst tending their young, they exhibit the greatest anxiety for their safety, and redouble their care and attention. This opinion is, however, in direct contradiction to the idea prevalent in America, that if the Mocking Thrush be alarmed it at once deserts its progeny. During the summer this species lives principally upon insects, which, unlike most Thrushes, it often pursues to a considerable height in the air. In autumn it feeds upon a great variety of berries. When caged it is readily reared upon the food usually given to Thrushes, but should also receive an occasional meal of ants' eggs or meal-worms. Upon this diet it will not only live for a considerable time and become extremely tame, but lay its eggs regularly from year to year.

THE FERRUGINOUS MOCKING BIRD, OR THRASHER.

The FERRUGINOUS MOCKING BIRD, or THRASHER (*Taxostoma rufum*), has a slender body, long wings, a short tail, and a powerful foot. The upper part of the body is brownish red; the under side, reddish white, striped with blackish brown upon the sides and breast; the small feathers on the wing-covers are edged with white, and thus form two light borders to the pinions; the eye is yellow, the beak blueish, and the foot brown. Its length is about twelve inches; this measurement includes the tail, which is nearly six inches. The wing is four inches and one-third.

"This large and well-known songster," says Nuttall, "is found in all parts of America, from Hudson's Bay to the shores of the Mexican Gulf, breeding everywhere, though most abundantly in the northern portions. Early in October these birds retire to the south, and probably extend their migrations at that season through the warmer regions towards the borders of the tropics. From the fifteenth of April till early in May they begin to revisit the Middle and Northern States, keeping pace in some measure with the progress of vegetation. They appear always to come in pairs, so that their mutual attachment is probably more durable than the season of incubation. Stationed near the top of some tall orchard or forest tree, the gay and animated male salutes the morn with his loud and charming song. His voice—resembling that of the Thrush of Europe, but far more powerful and varied—rises pre-eminent amidst all the choir of the forest. His music has all the full charm of originality; he takes no delight in mimicry, and, therefore, really has no right to the name of Mocking Bird. From the beginning to the middle of May the Thrasher is engaged in building his nest, usually selecting for this purpose a low thick bush in some retired thicket or swamp, a few feet from the earth, or even on the ground in some sheltered tussock, or near the root of a bush. It has a general resemblance to the nest of the Cat Bird; outwardly being made of small interlacing twigs, and then layers of dry oak or beech leaves. To these materials generally succeed a stratum of strips of grape-vine or red cedar bark; over the whole is piled a mass of some coarse root fibres, and the finishing lining is made of a layer of finer filaments of the same. The eggs (never exceeding five) are thickly sprinkled with minute spots of palish brown on a greenish ground. In the Central States these birds rear two broods in the year; in other parts of America but one. Both parents display the most ardent affection for their young, and attack dogs, cats, and snakes, in their defence. Towards their most insidious enemies of the human race, when the latter are approaching their helpless young, every art is displayed—threats, entreaties, and reproaches, the most pathetic and powerful, are tried; they dart at the ravisher with despair, and lament the bereavement they suffer in the most touching strains. I know nothing equal to the bursts of grief manifested by these affectionate parents except the accents of human suffering. Their food consists of worms, insects, caterpillars, beetles, and various kinds of berries. The movements of the Thrasher are active, watchful, and sly; it generally flies low, dwelling among thickets, and skipping from bush to bush with his long tail spread out like a fan."

THE CAT BIRD.

The CAT BIRD (*Galeoscoptes Carolinensis*) is almost entirely slate-grey, which is darkest on the back and lightest on the under side; the top of the head is brownish black, the throat light grey, and the lower wing-covers rust-red. Its length is nine inches, the wing four inches, and the tail four inches and three lines. The best account of this bird has been given by Wilson, who has described it at great length.

"The Cat Bird," says that graphic writer, "is very common in the United States, and arrives in the lower parts of Georgia from the south about the twenty-eighth of February, and probably winters in

Florida. About the beginning of May he has already succeeded in building his nest. The place chosen for this purpose is generally a thicket of briars or brambles, a thorn bush, thick vine, or the fork of a small sapling; no great solicitude is shown for concealment, though few birds appear more interested for the safety of their nests and young. The materials employed are dry leaves, or weeds, small twigs, or fine dry grass; the interior is lined with fine black fibrous roots. The female lays four, sometimes five eggs, of an uniform greenish blue colour, without any spots. Two, and occasionally three broods, are raised in the year.

"The manners of this species are lively, and at intervals border on the grotesque. It is extremely sensitive, and will follow an intruder to a considerable distance, wailing and mewing as it passes from one tree to another, its tail now jerked and thrown from side to side, its wings drooping,



THE CAT BIRD (*Galeoscoptes Carolinensis*).

and its breast deeply inclined. On such occasions it would fain peck at your hand; but these exhibitions of irritated feeling seldom take place after the young have sufficiently grown to take care of themselves. In some instances I have known this bird at once to recognise its friend from its foe, and to suffer the former even to handle the treasure deposited in its nest with all the marked assurance of the knowledge it possessed of its safety; while, on the contrary, the latter had to bear all its anger. The sight of a dog seldom irritates it, but a single glance at the wily cat excites the most painful paroxysms of alarm. It never neglects to attack a snake with fury, though it often happens that it becomes the sufferer for its temerity.

"The Cat Bird," continues the same author, "is one of our earliest morning songsters, beginning generally before break of day, and hovering from bush to bush with great sprightliness when there is scarce light sufficient to distinguish him. His notes are more remarkable for singularity than for melody. They consist of short imitations of other birds and other sounds; but his pipe being rather deficient in clearness and strength of tone, his imitations fail where these qualities are requisite.

Yet he is not easily discouraged, but seems to study certain passages with great perseverance, uttering them at first low, and, as he succeeds, higher and more freely, nowise embarrassed by the presence of a spectator even within a few yards of him. On attentively listening for some time, one can perceive considerable variety in his performance, in which he seems to introduce all the odd sounds and quaint passages he has been able to collect. Upon the whole, though we cannot arrange him with the grand leaders of our vernal choristers, he well merits a place among the most agreeable general performers.

"In spring or summer, on approaching a thicket of brambles, the first salutation you receive is from the Cat Bird; and a stranger, unacquainted with its note, would conclude that some vagrant orphan kitten had got bewildered in the briars, and wanted assistance, so exactly does the call of the bird sometimes resemble the voice of that animal.

"In passing through the woods in summer, I have sometimes amused myself with imitating the violent chirping or squeaking of young birds, in order to observe what different species were around me; for such sounds, at such a season, in the woods, are no less alarming to the feathered tenants of the bushes than the cry of fire or murder in the streets is to the inhabitants of a large and populous city. On such occasions of alarm and consternation, the Cat Bird is the first to make his appearance, not singly, but sometimes half a dozen at a time, flying from different quarters to the spot. At this time those who are disposed to play with his feelings may almost throw him into fits, his emotion and agitation are so great at the distressful cries of what he supposes to be his suffering young. Other birds are variously affected, but none show symptoms of such extreme suffering. He hurries backwards and forwards, with hanging wings and open mouth, calling out louder and faster, and actually screaming with distress, till he appears hoarse with his exertions. He attempts no offensive means, but he bewails, he implores, in the most pathetic terms with which Nature has supplied him, and with an agony of feeling which is truly affecting. Every feathered neighbour within hearing hastens to the place, to learn the cause of the alarm, peeping about with looks of consternation and sympathy; but their own duties and domestic concerns soon oblige each to withdraw. At any other season the most perfect imitations have no effect whatever on him."

The BABBLERS, or NOISY THRUSHES (*Timaliæ*), constitute a very numerous race, inhabiting Africa, Southern Asia, and other portions of the eastern hemisphere. The members of this family are in many respects nearly allied to the birds above described, but are recognisable by their compact body, short, rounded wings, in which the fourth or fifth quill is the longest; a moderate-sized, broad-feathered, and more or less rounded tail, powerful foot, and comparatively strong, compressed beak, slightly bent at the tip of the upper mandible. The plumage is unusually lax, and of a dusky hue.

These birds frequent tracts of brushwood or underwood in extensive forests or cane districts, and subsist upon the insects, snails, worms, fruits, and berries that abound in their favourite localities. All are active, restless, and social in their habits, although they rarely assemble in large flocks, and are invariably extremely noisy. Only a few possess good voices. Their powers of flight are by no means great, and rarely enable them to rise as high as the summits of the trees; but they exhibit remarkable agility in skipping in and out amidst the densest foliage.

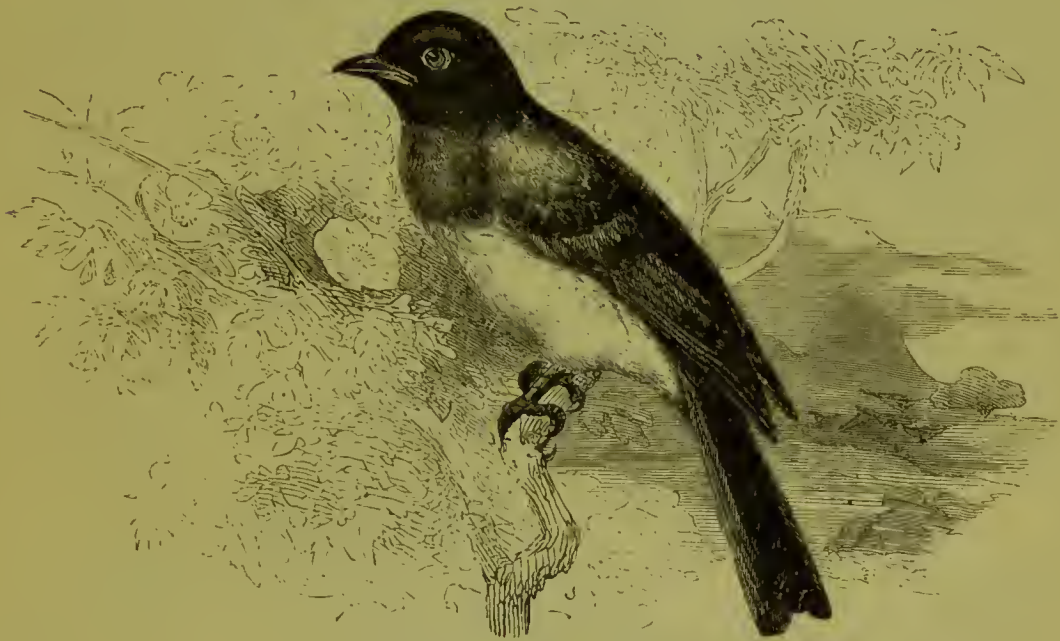
THE GREY BIRD.

The GREY BIRD (*Pycnonotus arsinoë*) represents a group whose principal characteristics are their middle-sized but strong and slightly-curved beak, powerful foot, moderately long wings, in which the fifth quill is the longest, and somewhat rounded tail. The plumage is lax, and generally, with the exception of the lower tail-covers, of dull appearance. The Grey Bird is about seven and a half

inches long and eleven broad, the wing three inches and a quarter, and the tail three inches in length. It is of a deep greyish brown on the back and top of the head. The head and throat are blackish brown, the breast and belly whitish grey; the eye is brown, the beak and feet black. Both sexes are alike in colour.

LE VAILLANT'S GREY BIRD.

LE VAILLANT'S GREY BIRD (*Pycnonotus Vaillantii*) is a very similar but larger species, met with in Arabia and the Cape of Good Hope. The body of this bird, which we have named after the celebrated traveller Le Vaillant, is of a somewhat lighter grey, and the under side of the wing and rump of a beautiful sulphur-yellow. It has been asserted that a third member of this group has been seen in Spain, but all our attempts to discover it have proved unavailing. Africa and Southern Asia must unquestionably be regarded as forming the almost exclusive habitat of the Grey Birds, from



THE GREY BIRD (*Pycnonotus arsinœ*).

whence they but very rarely wander as far as Europe, or even Arabia. They are first met with in any considerable numbers at about twenty-five degrees north latitude. In the north of Nubia they are to be seen on every mimosa hedge, and in Eastern Soudan are more commonly met with than almost any other bird; in the latter country they alike frequent forests and gardens, mountains or plains, but usually seem to prefer such spots as afford a shelter from the sun; for this reason they are constantly found under the leafy branches of the sycamores that abound on the banks of the Lower Nile. Towards man they exhibit no fear, but trustingly take up their abode close to the huts of the natives. Their temperament is cheerful and restless, and their movements upon the ground and among the branches sprightly and active. Their flight, on the contrary, is by no means elegant, and usually consists of a kind of hovering, fluttering motion. From early morning till late in the evening their loud, clear, and often beautiful voices are to be heard almost incessantly, as they hop busily to and fro, gleaning caterpillars or insects from the leaves, pausing ever and anon to expand or elevate the long feathers that decorate the back of the head, and, with body erect, to cast a keen investigating glance on the surrounding buds and blossoms. Whilst the mimosa is in bloom, they are constantly

to be seen upon its branches, diving their beaks amidst the yellow petals, in order to obtain the tiny beetles that lurk within, and thereby smearing their heads all over in the most ludicrous manner with the bright golden pollen that is profusely scattered over the stamens of the flowers. During the period of incubation, which in Soudan commences with the rainy season, and, in more northern latitudes, in the months that correspond with our spring, not only the couples, but the settlements of couples that often build upon the same tree live together in the utmost harmony. The nests are always carefully concealed under the foliage, though so slenderly constructed as to be permeable to light; their sides are composed of fine grass and roots, woven together with spiders' webs, and smoothly lined with delicate fibres. The eggs are small, of a reddish white colour, and marked with dark brown and blueish grey spots, some of which form a wreath at the broad end. We were unable to obtain further particulars respecting the breeding of either this or the preceding species. The natives of Northern Africa are far too indolent to attempt to tame these interesting birds, but in India they are much prized, and frequently reared in cages, not, however, on account of their song, but owing to the sport they afford as combatants; indeed, they are regularly trained for the cruel purpose of making them fight. In Ceylon the *Pycnonotus hæmorrhous* is taken young from the nest, and secured by a string to its perch; it is taught to come at its master's call, and when it has learnt the necessary obedience, is confronted with another bird similarly fastened, and the two are then incited to attack each other with such fury as would certainly end in the death of one or both, did not the spectators take care to separate them at the proper moment by means of the strings.

The TRUE BABBLERS (*Timalia*) inhabit Southern Asia, and are distinguishable by their powerful beak, which is decidedly arched and much compressed at its sides, as well as by their strong feet and claws, long hinder toes, short rounded wings, in which the fifth and sixth quills exceed the rest in length, and moderately long, rounded tail. At the base of the beak there is a growth of well-developed bristles.

THE RED-HEADED BABBLER.

The RED-HEADED BABBLER (*Timalia pileata*) is olive-brown on the wings and tail; the sides of the head and nape are dark grey; the brow and region of the ear white; the top of the head is brilliant rust-red; the throat and breast pure white, the former delicately marked with black; the belly is of a pale reddish hue, shaded with olive-brown upon its sides; the eye is dull red, beak black, and the feet flesh-pink; the body measures six inches and three-quarters, the wing two inches and three-eighths, and the tail two inches and four-fifths. Horsfield, who discovered this species, saw it first in Java, and tells us that its song consists of the five first notes of the gamut, *c, d, e, f, g*, repeated in their proper succession with great regularity. More recent travellers have found it on the continent of India, and from them we learn that the Red-headed Babblers principally frequent tracts of underwood that mark the places where the ancient forests once stood, or districts thickly overgrown with shrubs and bushes, and that they are more numerous met with in highland than lowland regions. Everywhere they live in pairs, and, though they rarely venture forth into the open country, are often to be seen in the early morning, perching on the branches of their leafy retreats, whilst they preen their feathers or dry their wet plumage. Even during the breeding season the male frequently adopts this position, and sits with drooping wings, apparently entirely forgetful, not only that his mate is left solitary, but of everything around him. At other times the somewhat neglectful spouse endeavours to cheer his hard-working partner with his song, accompanying his notes by spreading the long feathers at the back of his head and brandishing his tail aloft. The nest of these birds, which is deep, cup-shaped, and very fragile, is usually formed of leaves woven neatly

together, and is placed in a bush at a considerable height from the ground. The eggs, from two to three in number, are white, thickly covered with reddish brown markings of various shades, largest and most numerous at the broad end, and often intermixed with a few dark grey patches, that appear to penetrate deep into the shell.

The HOOK-CLAWED BABBLERS (*Crateropus*), another group of the same family, are recognisable by their strongly-built body, rather long, powerful, and slightly arched beak, which is compressed at its sides; moderate sized, strong feet, armed with formidable hooked and pointed



THE WHITE-RUMPED BABBLER (*Crateropus leucopygius*).

claws; short wings, in which the fourth quill exceeds the rest in length; and long tail, formed of large feathers, and slightly graduated at the sides. The plumage is thick, harsh, and rarely very brightly coloured.

THE WHITE-RUMPED BABBLER.

The WHITE-RUMPED BABBLER (*Crateropus leucopygius*) is chocolate-brown on the upper part of the body; the top of the head, face, and rump are white; the feathers on the under side brownish grey, edged with white, this bordering presenting the appearance of crescent-shaped spots; the quills and tail-feathers are marked with a series of dark lines; the eye is deep carmine-red, the beak black, and the feet grey. These Babblers are social in their habits, and are always met with in small parties, numbering from eight to twelve birds. Their flight, which is performed by alternate rapid

strokes of the wings and a hovering motion produced by broadly expanding the pinions and tail, is rarely sustained for any great distance, and has no pretence to either grace or speed. In the brushwood, on the contrary, they exhibit a wonderful power of climbing and creeping through dense foliage, such as will bear comparison with that of the Mouse Birds themselves. Few sights are more amusing than that presented by a party of these noisy chatterers, as they fly quite close together from bush to bush, settling on each one in turn, creeping through it in all directions, and screaming violently whenever anything attractive or unusual catches their eye, then, having snapped up as many insects and devoured as many buds and leaves as their appetites require, they re-assemble, and fly



THE WHITE-TUFTED LAUGHING THRUSH (*Garrulax leucolophus*).

off in closely-packed array, to repeat the same process at another spot. We are entirely without particulars either respecting their nidification or manner of breeding.

The LAUGHING THRUSHES (*Garrulax*), inhabiting India and Southern Asia, resemble the above-mentioned group so closely in their general appearance as to render any detailed description of their habits mere repetition; we shall therefore content ourselves with the mention of but one species, as the mode of life and habits and general appearance of the group is very similar.

THE WHITE-TUFTED LAUGHING THRUSH.

The WHITE-TUFTED LAUGHING THRUSH (*Garrulax leucolophus*) is a large bird, about twelve inches long and fifteen and a half broad ; its wing and tail both measure five inches. The head—with the exception of the black cheek-stripes—the nape, throat, and breast are pure white, shaded with grey upon the sides ; the rest of the plumage is of a reddish olive-brown, deepest in shade on the inner web of the quills and tail-feathers. All the wooded tracts of the Himalayas afford shelter to large numbers of these remarkable birds, and resound with their most peculiar cry, which so closely resembles a hideous laugh as to startle, and, indeed, positively to terrify such as hear it for the first time. Insects, snails, worms, and berries afford them their principal means of subsistence ; the former are sought for on the ground or in the foliage, and the latter are gathered from the branches as they hang suspended from the trees. The nest is a mere mass of roots, moss, and grass, placed in a thick bush. The eggs are few in number, and have a pure white shell. Frith gives us an interesting account of the manner in which a very similar species, the CHINESE LAUGHING THRUSH (*Garrulax Chinensis*), kills and devours its prey. “This bird,” he tells us, “seized a snake about a foot long that was put into its cage, struck it against the ground, bored its head repeatedly with its bill, and then proceeded to eat it, holding the body firmly with his foot whilst he tore it into pieces. Large beetles he treated in a similar manner, and, previous to snapping up a wasp or a bee, always allowed his intended victim to drive its sting repeatedly into his expanded tail ; small pieces of cooked flesh he placed between the bars of his cage before proceeding to devour them.”

The WATER OUZELS (*Cinclus*) constitute a group whose members, though closely allied to the Thrushes, have been separated from them on account of certain peculiarities by which they are distinguished. They all have slender bodies, which, however, appear stout, owing to the great thickness of the plumage ; delicate, almost straight beaks, compressed at the sides and narrow towards the tip ; the nostrils are closed by a fold of skin ; the feet are high and strong, the toes long, and armed with very hooked and strong claws ; the wing is unusually short, much rounded, and almost as broad as it is long ; the tail-feathers, which are broad and slightly rounded at the extremity, are so short as to be little more than stumps. The thick, soft plumage is totally unlike that possessed by any other land birds, being furnished with an undergrowth of downy feathers. The Water Ouzels are met with in all parts of the world, but are especially numerous in northern countries ; they are also occasionally seen in the Himalayas, Andes, and other tropical mountain ranges.

THE WATER OUZEL, OR DIPPER.

The WATER OUZEL, or DIPPER (*Cinclus aquaticus*), is seven and a half inches long, and eleven and one-third broad, the wing measures three and a half, and the tail two inches ; the female is a few lines smaller than her mate. The coloration of the plumage is simple, but very striking, the head and nape are yellowish brown ; the feathers on the rest of the upper part of the body are slate-grey, edged with black ; the entire throat is milk-white ; the upper breast reddish brown, and the remainder of the under side deep brown ; the feathers of the young are light slate-colour, bordered with a deeper shade on the back, and on the under parts of a dirty white, with dark edges and markings. The Dippers are found very extensively throughout all such European mountain ranges—except the Scandinavian Alps, where they are replaced by a similar but darker bird—as are well supplied with water ; they also frequent Central Asia, Palestine, and North-western Africa. In the south and extreme east of Asia and in America they are represented by a variety of nearly allied species. In Great Britain they are also numerous, especially in Derbyshire, upon the banks of the Dove and

Derwent. Waterfalls, rippling streams, and mountain lakes are the localities they most delight in; and in the vicinity of these they often remain throughout the entire year, always providing that during



WATER OUZELS AND KINGFISHER.

the winter the ice upon the surface of the water does not so entirely cover it as to prevent them from indulging in the constant immersions that may be said to be almost necessary to their existence. It is not uncommon to see the banks of a mountain stream, from its source to its fall, occupied by a party of these birds, each pair taking possession of about a quarter of a mile of water, and living strictly

within the limits of its district. Those who have been at the pains to observe the movements and habits of this interesting species, cannot fail to have been delighted by the antics it performs while carrying on its bathing operations; not merely does it run over the stony bed of the river with the utmost agility, and wade even up to its eyes in the rippling stream, but continues its course under the water, or even beneath the ice, to a considerable depth, not, as has been stated, for a minute at a time, but certainly during the space of from fifteen to twenty seconds. Strange as this performance by so small a bird may appear to our readers, wading is the least extraordinary part of its proceedings; into the swift eddying rapid, into the bed of the roaring, rushing waterfall, it boldly plunges, steering its way, if need be, with the aid of its short wings, through the whirling masses of



THE WATER OUZEL, OR DIPPER (*Cinclus aqualicus*).

water, and flying, or rather, we should say, swimming, by the help of its pinions, across more tranquil spots with an ease that will bear comparison with the movements of almost any species of waterfowl. Nuttall says, in speaking of these birds, "When the water becomes deep enough for them to plunge, they open and drop their wings with an agitated motion, and, with the head stretched out as in the ordinary act of flying in the air, descend to the bottom, and there, as if on the ground, course up and down in quest of food. While under the water, to which their peculiar plumage is impermeable, they appear as though silvered over with rapidly escaping bubbles of air." A writer in the "Annals of Sporting," gives the following interesting account of a party of these birds, to whose movements he was an eye-witness:—

"About four years ago, when on a shooting excursion, I embraced the opportunity—as everybody else who has it ought to do—of visiting the deservedly celebrated Falls of the Clyde, and

here it was, while viewing the Fall of Bonnington, that, happening to cast my eye down below, a little beyond the foot of the cascade, where the river is broken with stones and fragments of rock, I espied, standing near each other on a large stone, no less than five Water Ouzels. Thus favourably stationed as I was for a view—myself unseen—I had a fair opportunity for overlooking their manoeuvres. I observed accordingly that they flirted up their tails and flew from one stone to another, till at length they mustered again upon the identical one on which I had first espied them. They next entered into the water and disappeared, but they did not all do this at the same time, neither did they do it in the same manner. Three of them plunged over head instantaneously, but the remaining two walked gradually into the stream, and having displayed their wings, spread them on the surface, and by this means appeared entirely to support themselves. In this position they continued for some time—at one moment quickly spinning themselves, as it were, two or three times round, at another remaining perfectly motionless on the surface; at length they almost insensibly sank. What became of them it is not in my power to state, the water not being sufficiently transparent for me to discover the bottom of the river, particularly as I was elevated so much above it. Neither can I say that I perceived any one of them emerge again, although I kept glancing my eye in every direction, in order, if possible, to catch them in the act of re-appearing. The plumage of the bird, indeed, being so much in harmony with the surrounding masses of stone, rendered it not very easily distinguishable. I did, however, afterwards observe two of these birds on the opposite side of the stream, and possibly the three others might also have emerged and escaped my notice."

Mr. Mudie, in his "Feathered Tribes," observes—"A question has been raised how the Dipper can contrive to keep beneath a fluid so much more dense than itself. An Owl to an Owl's bulk of air is as a stone to a pound, as compared with the Dipper's bulk of water to the Dipper; but if birds rise and ascend in the air at pleasure by the motions of their wings, it is only reversing those motions to enable them to descend or keep themselves down in water. The difference of specific gravity between the bird and the water is indeed so trifling that very little effort suffices to move it in any direction, upwards, downwards, or laterally. Birds do not fly upon the principle of specific gravity, as, with equal wings, the heavy birds fly best; they fly because they strike the air more forcibly in the opposite direction to that in which they wish to go, and, under water, the Dipper just does the same. If it wishes to go down, it strikes upwards with the wings and tail; if to come up, it does just the reverse. The only difference is that the wings are held 'recovered,' as running birds use them, and that gravitation has even less to do in the matter than in flying. Any one who has ever seen a Dipper under water, or has the slightest knowledge of the mere elements of mechanics, can understand the whole matter in an instant. The Dipper is indeed often adduced as an instance of the beautiful simplicity of animal mechanics."

The flight of the Water Ouzel is effected by a series of rapidly repeated strokes, yet, even when winging its way through the air, the bird skims along near the surface of the stream, darting down from time to time to seize a passing insect. Only when hotly pursued does it quit the vicinity of its favourite lake or river, and seek safety by flying to any considerable distance, and it always returns to its usual haunts as soon as the cause of its alarm has disappeared. While perched upon an elevated point on the bank, engaged in watching for prey, it is not uncommon to see it dart suddenly down and seize its victim with an action more resembling the leap of a frog than the movement of a member of the feathered creation. As regards intelligence and the perfection of its senses, this remarkable bird is decidedly highly endowed; its sight and hearing, in particular, are extremely acute. In disposition it is cunning, cautious, and so observant that it at once perceives any unusual object or detects approaching danger.

To the presence of man the Dipper usually exhibits the utmost repugnance, whether he come in

the guise of a friend or foe, nor is it less fearful of the attacks of the numerous birds of prey that dwell around and within its rocky haunts. We learn from Homeyer, who has observed these Ouzels very extensively, that their dislike to man, above alluded to, is sometimes laid aside, and that they have not only been known to allow the approach of a stranger, but have even ventured to approach mill-streams, and, in some instances, cultivated quite a close acquaintance with the miller and his family. The same writer also mentions that a pair of these birds made their appearance in Baden-Baden, and much astonished the visitors at one of the largest hotels, by commencing their diving and bathing operations immediately in front of the house. Even towards birds of its own kind, the Water Ouzel is extremely unsocial; only during the period of incubation does it tolerate the society of its mates; at other times it lives alone, driving off any of its neighbours that unwarily intrude within the precincts of its little domain with a violence well calculated to prevent a renewal of the offence, as the following extract will show:—

“A gentleman,” says a correspondent of the *Field* newspaper, “was walking along the bank of a little stream in Pembrokeshire, when he saw a Dipper, shooting along with its usual arrowy flight, divert itself from its course, and, dashing against a Redbreast that was sitting quietly on a twig overhanging the stream, knock it fairly into the water. The savage little bird was not content with this assault, but continued to attack the poor Redbreast as it lay fluttering on the waves, endeavouring to force it below the surface. It twice drove its victim under water, and would have killed it, had it not been scared away by the shouts and gestures of the witness. The Robin at length succeeded in scrambling to the bank, and got away in safety.” So strong is this dislike to companionship, that even the young are sent forth to provide for themselves at such a tender age as would appear to render it impossible for them to obtain their own livelihood.

The song of the male Dipper may be best described as a lively chatter, consisting of a variety of light tones uttered with different degrees of sound and expression, and is to be heard not only in the spring, but during the utmost severity of the winter. “Those,” says Schinz, “who have listened to their cheerful voices on a bleak January morning, when every object in the landscape seemed frozen or dead, or watched the gay little singers as, in the very joyousness of their heart, they sprung through a hole into the ice-bound stream, to take their usual copious bath, would be inclined to believe that they are actually insensible to the chilling breath of the frost and the icy nature of the scene around them.” Insects of all kinds constitute their principal means of existence. Gloger tells us that during the winter they also frequently eat mussels and small fish, and that this diet imparts a fishy flavour to their flesh. Should the season be unusually severe, they are sometimes compelled to venture forth and snatch a meal from the most unlikely places; thus we were informed by a miller in our neighbourhood that his mill was repeatedly visited during a heavy frost by a pair of these birds, they being attracted by the hope of obtaining a portion of the oil with which the mill-wheels were greased, and so overcome with hunger were the poor creatures that they swallowed the grease boldly, even when one of the men stood close to the spot.

The period of incubation commences in April, one brood and occasionally two being produced within the year. The nest is constructed close to the surface of the water, and, if possible, in such a situation as to permit the stream to flow past it, and thus afford protection against the attacks of martens, weasels, cats, and such-like enemies; it is usually placed upon projecting stones or rocks, or in holes in bridges or mill-dams, and similar situations. In an instance that came under our own notice, it was built in the wheel of a mill that had for a time stopped work. All our endeavours to obtain a sight of the nest last mentioned would have been useless, had not the friendly miller drawn off the water, and thus permitted us to satisfy our curiosity. The cavity, or nook selected for the reception of the brood is lined with a thick bed of twigs, grass, straw, and moss,

these materials being overspread with a layer of leaves. If the mouth of the hole be large it is covered with a kind of mossy lid, resembling that made by the Wren for her little abode, leaving only an entrance passage of very moderate dimensions. When placed among the machinery of a mill, the nest has sometimes required to be two feet long, in order to keep it firmly fixed on its precarious foundation. The eggs, from four to six in number, are of a glossy white, variously shaped, but generally from eight to ten lines long, and eight to eight and a half lines broad. Though the female broods with such diligence and care that she will not even make her escape at the approach of danger, she rarely succeeds in hatching more than two of her brood, the rest of the eggs being no doubt addled by the damp situation of the nest. Whilst engaged in tending their young family, the parents often appear to lay aside their usual timidity, and will permit a stranger to investigate their proceedings without exhibiting any sign of fear.

THE AMERICAN WATER OUZEL.

The AMERICAN WATER OUZEL (*Cinclus Americanus*) differs from the European species above described by the absence of white on the brownish chin and throat. Nuttall tells us, in his interesting work on American ornithology, that "this bird was first noticed by Pallas in the Crimea, and afterwards by Mr. Bullock in Mexico, from whence it appears, by an exclusively interior route, to penetrate into the wild and remote interior of Canada, as far as the shores of the Athabasca Lake."

Mr. Townsend says, in speaking of this bird—whose habits are but little known—"The American Dipper inhabits the clear mountain streams in the vicinity of the Columbia. When observed it was swimming along the rapids, occasionally flying for short distances over the surface of the water, and then diving into it, re-appearing after a short interval. Sometimes it alights on the banks of the stream, and jerks its tail upwards like a Wren. I did not hear it utter any note. The stomach was found to contain fragments of fresh-water snail-shells. I observed that this bird did not alight on the surface of the water, but dived immediately while on the wing."

The PITTAS, or PAINTED THRUSHES (*Pittæ*), constitute a family of birds nearly allied to the preceding, and remarkable for their short but powerful body, moderately long neck, large head, and long wings—in which the fourth and fifth quills exceed the rest in length—that reach to the tips of the very short, straight tail. All have unusually powerful beaks, compressed at the sides, and slightly arched at the culmen, those of some species in particular being so strong as to have occasioned Linnæus to class them with the Ravens. The foot is slender, the tarsus high, and the outer toes connected with that in the centre as far as the first joint. The plumage is thick and full, and usually glows with the most resplendent colours. Owing to the great variety of hue and difference in the shape of the beak and length of quills observable in the different members of this family, they have been necessarily subdivided, although they all nearly resemble each other in their habits and mode of life.

THE NURANG.

The NURANG of the Hindoos (*Pitta Bengalensis*) is blueish green upon the back, shoulders, and wing-covers; the somewhat prolonged upper tail-covers are pale blue, the chin, breast, and throat beneath the ear white; the under side is entirely brownish yellow, with the exception of a scarlet patch on the lower part of the belly and vent; a stripe that passes over the eyes is black, as well as a line over the head; a streak forming the eyebrow is white. The quills are black, tipped with white, the first six primaries being also spotted with white; the secondaries are edged with bluish green on the outer web; the tail-feathers are black, tipped with dull blue, and a brilliant



Geothlypis trichas

THE BLUE WOODPECKER

THE BLUE WOODPECKER

THE BLUE WOODPECKER

azure patch decorates the region of the shoulder. The eye is nut-brown, the beak black, and the foot reddish yellow. The length of the body is seven inches, that of the wing four, and the tail measures one inch and two-thirds. The Nurang is met with throughout the whole of India and Ceylon, and in some localities is very numerous.

THE PULIH.

The PULIH (*Pitta Angolensis*) one of the most beautiful birds of Western Africa, is more powerfully constructed, and has shorter feet than the last-mentioned species, but is similarly coloured. The plumage on the upper part of the body is green, with a slight metallic lustre; the top of the head, a broad cheek-stripe, the tail, lower wing-covers, and quills are black, the latter, from the third to the sixth, enlivened by a white spot; the tips of the tail-feathers and those upon the rump are greenish blue, the throat and a streak over the eyes reddish white; the upper breast is ochre-yellow, the lower part of the body light scarlet, the beak reddish black, and the foot flesh-pink. The length of the body is six inches and a quarter, that of the wing four, and the tail one inch and two-thirds. The Pulih inhabits a large portion of Western Africa.

THE NOISY PITTA.

The NOISY PITTA (*Pitta strepitans*) the third species we have selected for description, is of a beautiful olive-green on the back and wings; the shoulders and wing-covers are of the colour of verdigris; the throat, region of the ears, and nape, black; the under side is reddish yellow, with a black and scarlet patch on the belly and lower tail-covers, the rest of the tail and exterior quills are black, the fourth, fifth, and sixth primaries being ornamented with a white spot upon the base. The eye is brown, the beak dark brown, and the foot flesh-pink. The body is seven inches and a half long. This beautiful bird is met with on the eastern coast of Australia, between Macquarie and Moreton Bays.

The Pittas almost exclusively inhabit India and the neighbouring islands, Western Africa, and Australia, and are never met with in the Western Hemisphere. Of the thirty-three species enumerated by Wallace, six belong to Africa, two to Australia, and no less than twenty-five to the Malay Islands. Almost all frequent the inmost recesses of vast forests, whilst a few, on the contrary, occupy such rocky districts as are covered with brushwood. Jerdon is of opinion that their very inferior powers of flight place them almost at the mercy of the heavy winds that occur at certain seasons, and account for their being occasionally compelled to steer their course for localities to which they would not voluntarily resort. The first Nurang seen by him had taken shelter from a storm within the hospital at Madras.

All the various species respecting whose breeding we have any particulars, build close to the ground, and form their nests carelessly of grass, stalks, twigs, or roots, lined with hair, moss, or delicate leaves. The eggs vary considerably in appearance; those found by Bernstein were oval, and had a glossy white shell, whilst other authorities tell us that those laid by some species are bright yellow, irregularly marked with brown and deep purplish grey, while others again are greenish white, spotted with red and other dark tints. It has not yet been ascertained whether the male assists in the labour of incubation, but both parents co-operate with the utmost courage and devotion in tending and protecting their young family. Strange informs us that the Australian species may be allured to come down from the trees, even almost to the mouth of the gun, by a careful imitation of their call-note, and Hodgson speaks in similar terms of those inhabiting Nepaul. Bernstein succeeded in rearing a pair of Pittas that he had taken from the nest upon insect diet, and also rendered them extremely tame.

The ANT THRUSHES (*Myiotheræ*) constitute a family of birds principally inhabiting South America. Some of them are very similar in appearance to the Wood Thrush, whilst others resemble the Shrikes. The formation of the beak varies considerably, being sometimes much arched, sometimes awl-shaped, and of very different size and strength. The tail is of various lengths, straight or rounded at its extremity, the wing is invariably short and rounded, the tarsus is high and powerful, while the toes are long, thin, and armed with long, slender, and occasionally spur-shaped claws. The plumage of all is soft and much variegated.

The Ant Thrushes inhabit forests or wooded tracts that abound upon the vast prairies of South America, and appear entirely to avoid mountain regions. Some few species venture near the inhabited districts; but, for the most part, they resort to the densest thickets or closest copses, and are most numerous in the hottest, quietest, and moistest localities, where they generally live upon the ground, and trust, even when alarmed, more to the swiftness of their feet than to the use of their wings. Other species again, frequent the bushes, and hop from branch to branch in search of food. The strength of foot displayed by the members of this family fully equals that of any other race of birds; they leap up and down with the utmost agility, and when endeavouring to elude pursuit, spring over the ground with a rapidity that renders it difficult even for a dog to overtake them. It is only during the period of incubation that the Ant Thrushes are content to take up their abode in any one particular spot; at other seasons they wander about from place to place, without, however, undertaking any regular migrations. We are almost unacquainted with the voices of these birds, but are told that great dissimilarity is observable in their notes, and that though some species are far noisier than the rest, none are distinguished for their powers of song. Insects constitute their principal food: these are obtained from the surface of the ground, sometimes by scratching upon it after the manner of hens. According to Kittlitz, they by no means despise vegetable diet. They greedily devour ants, and thus render inestimable service to mankind, by helping to destroy some of the vast swarms of those much-dreaded insects that occasionally sweep over the face of the country. "Everywhere in the neighbourhood of Para," Mr. Bates tells us, "the Saüba Ants are seen marching to and fro in broad columns, and carrying destruction among the cultivated trees and vegetables of the Brazilians. So large are the communities made by these tiny creatures, that the traveller often comes upon heaps of their dwellings of not less than forty yards in circumference, though not more than two feet high." We learn from Ménétrier that the Ant Thrushes breed in the spring-time of their native lands, and lay from two to three white eggs, marked with red; these are usually deposited with but slight preparations in a hole in the ground, or some similar situation.

THE FIRE EYE.

The FIRE EYE (*Pyriglena domicella*) is a well-known member of the family of Ant Thrushes, belonging to a group that comprises a number of the long-tailed species, who live principally amongst the branches of shrubs or in the underwood, and comparatively rarely seek their food upon the surface of the ground. They are all recognisable by their straight, conical beak, which is hooked at its tip, and slightly incised; also by their high powerful tarsi, strong toes, armed with short, slender, curved claws, moderate-sized wings, in which the fourth quill exceeds the rest in length, and moderately long and rounded tail. The plumage of the male Fire Eye is almost entirely black, as are also the beak and feet. The larger feathers of the wing-covers are edged with white, and those upon the shoulder entirely white. The eye, as the name of the bird indicates, is of a brilliant fiery red. The female is olive-brown, except upon the nape and throat, which are pale yellow. The length of this species is seven inches, its breadth nine inches; the wing measures three inches, and the tail two inches and three-quarters. The Fire Eye inhabits the forests of Brazil, and principally

frequents the shrubs or brushwood in the most shady and retired spots. Its song has been described as a mere piping twitter. So eagerly does this very remarkable bird carry on its chase after ants, that Kittlitz tells us that upon one occasion he fired repeatedly into the midst of a busy party, occupied in clearing a clump of canes from a swarm of black ants, without causing them to cease from their work of destruction.

THE ANT KING.

The ANT KING (*Grallaria rex*) another of these Thrushes, represents a group recognisable by their short, thick beak, which is incised towards its hooked tip, and slightly arched at the culmen; short, rounded wings, in which the fifth quill is the longest, that scarcely reach beyond the base of the mere stump-like tail; slender legs, and moderate-sized toes, armed with somewhat curved claws. The plumage is principally brown, the smaller feathers being spotted on the shaft with a lighter shade; the wing-covers have a reddish tinge; the quills and tail-feathers are blackish brown, their outer web rust-red; the bridle, cheeks, and a stripe that passes from the chin to the throat are pale yellowish white; the entire under side is light yellowish brown, the eye greyish brown, the beak blackish grey, and the feet reddish grey; the body measures eight, the wing four inches, the tail an inch and a half, and the tarsus two inches. All the interminable forests upon the coast of South America, from Brazil to Columbia, are inhabited by these birds, of whose habits, however, we are completely ignorant, as they live exclusively within the shelter of the densest brushwood, and invariably take flight at the approach of man. Burmeister tells us that their penetrating cry is to be heard from early morning till late in the evening; that they make their nest upon the ground, and lay blueish green eggs.

THE TAPACOLO.

The TAPACOLO (*Pteroptochus megapodius*) represents another group of South American Ant Thrushes, in many respects resembling the Australian Lyre Birds, and particularly characterised by the very unusual development of the feet. Their body is elongate, their wing short, their tail rounded and of medium size; the beak is powerful, and compressed at the sides; the tarsus is robust, and of moderate height; the toes are slender, and armed with slightly-curved spur-like claws of great length. The TAPACOLO or TUALO of Chili is of a brownish olive on the upper part of the body; the breast is reddish brown, and the rump of a reddish brown hue, striped with white; the belly whitish, with dark markings; the throat, sides of the neck, and a line over the eyes are white; the quills bordered with reddish brown, and the tail-feathers entirely brown.

"The *Pteroptochus megapodius*," says Mr. Darwin, "called by the Chilians 'el Turco,' is as large as a Fieldfare, to which bird it has some alliance; but its legs are much longer, tail shorter, and beak stronger; its colour is a reddish brown. The Turco is not uncommon. It lives on the ground, sheltered among the thickets which are scattered over the dry and sterile hills. With its tail erect, and stilt-like legs, it may be seen every now and then popping from one bush to another with uncommon celerity. It really requires little imagination to believe the bird is ashamed of itself, and aware of its most ridiculous figure. On first seeing it one is tempted to exclaim, 'A vilely-stuffed specimen has escaped from some museum, and has come to life again.' It cannot be made to take flight without the greatest trouble, nor does it run, but only hops. The various loud cries which it utters when concealed amongst the bushes are as strange as its whole appearance. It is said to build its nest in a deep hole beneath the ground. I dissected several specimens; the gizzard, which was very muscular, contained beetles, vegetable fibre, and pebbles. From this character, and from the length of its legs, scratching feet, membraneous covering to the nostrils, and short and arched wing, this bird seems, to a certain extent, to connect the Thrushes with the gallinaceous order.

"The Tapacolo," continues the same writer, "is very crafty. When frightened by any person, it will remain motionless at the bottom of a bush, and will then, after a little while, try, with much address, to crawl away on the opposite side. It is also an active bird, and continually making a noise. These noises are very various and strangely odd; some are like the cooing of Doves, others like the bubbling of water, and many defy all similes. The country people say it changes its cry five times in the year; according to some change of season, I suppose."

THE LYRE BIRD.

The LYRE BIRD (*Menura superba*) has, perhaps, excited more controversy among ornithologists, respecting its classification, than any other of the remarkable members of the feathered creation



THE TAPACOLO (*Pteroptochus megapodius*).

inhabiting Australia. This difference of opinion has arisen from its unusual size, and the very peculiar formation of its tail. The body is slenderly built, the neck of moderate length, the head comparatively large and well-formed, the wings short, the tail very long, and the tarsus high. The beak is straight, except at the tip, which is slightly hooked, very perceptibly incised, and broader than it is high at the base; the nostrils are large, oval, situated near the middle of the bill, and partially covered with a skin. The first five quills in the much-arched wing are graduated; the sixth, seventh, eighth, and ninth are the longest, and of nearly equal size. The very beautiful lyre-shaped tail possessed by the male is composed of sixteen feathers, whilst that of the female is of the ordinary form, and contains but twelve. The plumage of the *Menura* is thick, lax, and almost hair-like on the back and rump, but prolonged into a crest on the top of the head; the base of the beak is covered with bristles. The length of the body of the male is fifteen inches, that of his tail twenty-three, whilst his mate does not exceed thirteen inches; the



THE LYRE BIRD (*Menura superba*).

longest feathers in her tail measuring not more than fifteen inches. The male *Menura* is of a deep brownish grey on the upper part of the body, shaded with red on the rump; the throat and upper part of the breast are red; the rest of the under side greyish brown, lightest upon the belly. The secondary quills and outer web of the primaries are reddish brown; the tail blackish brown on the upper side, and silvery grey beneath. The outer webs of the two lyre-shaped feathers are dark grey, their extremities velvety black, fringed with white, the inner web striped alternately with blackish brown and rust-red; the two centre tail-feathers are grey, the rest black. The plumage of the female is entirely of a dirty brown, shading into grey on the belly; the young resemble the mother until after the first moulting season. This remarkable bird, which, together with the Emeu and Kangaroo, form the emblems or heraldic bearings of Australia, has been most carefully observed and described by both Gould and Bennett; we shall, therefore, lay before our readers the interesting results of their labours in the words of those naturalists:—

“The great stronghold of the Lyre Birds,” says Mr. Gould, “is the colony of New South Wales, and, from what I could learn, its range does not extend so far to the eastward as Moreton Bay; neither have I been able to trace it to the westward of Port Phillip on the southern coast; but further research only can determine these points. It inhabits equally the bushes on the coast and those that clothe the sides of the mountains in the interior. On the coast it is especially abundant at the Western Port and Illawarra; in the interior the cedar bushes of the Liverpool range, and, according to Mr. G. Bennett, the mountains of the Tamat country are among the places of which it is a denizen. Of all the birds I have ever met with, the *Menura* is by far the most shy and difficult to procure. While among the mountains I have been surrounded by these birds, pouring forth their loud and liquid calls for days together, without being able to get a sight of them; and it was only by the most determined perseverance and extreme caution that I was enabled to effect this desirable object, which was rendered more difficult by their often frequenting the almost inaccessible and precipitous sides of gullies and ravines, covered with tangled masses of creepers and umbrageous trees. The cracking of a stick, the rolling down of a small stone, or any other noise, however slight, is sufficient to alarm it; and none but those who have traversed these rugged, hot, and suffocating bushes can fully understand the anxious labour attendant on the pursuit of the *Menura*. Independently of climbing over rocks and fallen trunks of trees, the sportsman has to creep and crawl beneath and among the branches with the utmost caution, taking care only to advance while the bird's attention is occupied in singing, or in scratching up the leaves in search of food: to watch its action it is necessary to remain perfectly motionless, not venturing to move, even in the slightest degree, or it vanishes from sight as if by magic. Although I have said so much on the cautiousness of the *Menura*, it is not always so alert: in some of the most accessible bushes through which roads have been cut it may frequently be seen, and even closely approached on horseback, the bird evincing less fear of horses than of man. At Illawarra it is sometimes successfully pursued by dogs, trained to rush suddenly upon it, when it immediately leaps upon the branch of a tree, and its attention being exclusively attracted by the dog below barking, it is easily approached and shot. Another successful mode of procedure is by wearing the tail of a full-plumaged male in the hat, keeping it constantly in motion, and concealing the person among the bushes, when, the attention of the bird being arrested by the apparent intrusion of another of its own sex, it will be attracted within the range of the gun. If the bird be hidden from view by surrounding objects, any unusual sound, such as a shrill whistle, will generally induce him to show himself for an instant, by causing him to leap with a gay and sprightly air upon some neighbouring branch, to ascertain the cause of the disturbance; advantage must be taken of this circumstance immediately, or the next moment it may be half-way down the gully. The *Menura* seldom, if ever, attempts to escape by flight, but easily

eludes pursuit by its extraordinary powers of running. None are so efficient in obtaining specimens as the naked black, whose noiseless and gliding steps enable him to steal upon it unheard or unperceived; with a gun in his hand he rarely allows it to escape, and in many instances he will even kill it with his own clumsy weapons. The Lyre Bird is of a wandering disposition, and, although it probably keeps to the same jungle, it is constantly engaged in traversing it from one end to the other, from the mountain base to the top of the gullies, whose steep and rugged sides present no obstacle to its long legs and powerful muscular thighs. It is also capable of performing extraordinary leaps, and I have heard it stated that it will spring ten feet perpendicularly from the ground. Among its many curious habits, the only one at all approaching to those of the Gallinacæ is that of forming small round hillocks, which are constantly visited during the day, and upon which the male is continually tramping, at the same time erecting and spreading out its tail in the most graceful manner, and uttering its various cries; sometimes pouring forth its natural notes; at others imitating those of other birds, and even the howling of the native dog (dingo). The early morning and evening are the periods when it is most animated and active. Although upon one occasion I forced this bird to take wing, it was merely for the purpose of descending a gully, and I am led to believe that it seldom exerts this power unless under similar circumstances. It is particularly partial to traversing the trunks of fallen trees, and frequently attains a considerable altitude by leaping from branch to branch. Independently of a loud full note, which may be heard reverberating over the gullies for at least a quarter of a mile, it has also an inward warbling song, the lower notes of which can only be heard within about fifteen yards. It remains stationary whilst singing, fully occupied in pouring forth its animated strain; this it frequently discontinues abruptly, and again commences with a low, inward snapping noise, ending with an imitation of the loud and full note of the Satin Bird, and always accompanied by a tremulous motion of the tail. The food of the *Menura* appears to consist principally of insects, particularly of centipedes and coleoptera. I also found the remains of shelled snails in the gizzard, which is very strong and muscular."

"I first," continues Mr. Gould, "saw these birds in the mountain range of the Tumat country. Lately they have been very abundant among the Blue Mountain ranges bordering on the Nepean River, above Emeu Plains, about thirty-five miles from Sydney. They are remarkably shy, very difficult of approach, frequenting the most inaccessible rocks and gullies; and, on the slightest disturbance, they dart off with surprising swiftness through the brakes, carrying their tail horizontally; but this appears to be for facilitating their passage through the bushes; for when they leap or spring from branch to branch, as they ascend or descend a tree, their tail approaches to the perpendicular. On watching them from an elevated position playing in a gully below, they are seen to form little hillocks or mounds by scratching up the ground around them, trampling and running flightily about, uttering their loud, shrill call, and imitating the notes of various birds."

The following account of a young Lyre Bird was received by Mr. Gould from Ludwig Becker:—

"In the month of October, 1858, the nest of a Lyre Bird was found in the densely-wooded ranges near the sources of the river Yarra-Yarra. It contained a bird which seemed at first to be an old one in a sickly condition, as it did not attempt to escape, but it was soon discovered to be a young bird of very large size as compared with its helplessness. When taken out of the nest it screamed loudly, the note being high, and sounding like 'tching-tching.' In a short time the mother-bird, attracted by the call, arrived, and, notwithstanding the proverbial shyness of the species, flew within a few feet of her young, and tried in vain to deliver it from captivity, by flapping her wings and making various rapid motions in different directions towards the captor. A shot brought down the poor bird, and, with its mother near it, the young *Menura* was silent and quiet. It was taken away, and kept at a 'mia-mia' erected in the midst of the surrounding forest.

"Its height was sixteen inches; its body covered with a brown down, but the wings and tail were already furnished with feathers of a dark-brown colour. The head was thickly covered with a greyish-white down, of from one to two inches in length; the eyes were hazel brown; the beak blackish and soft; the legs nearly as large as those of a full-grown specimen, but it walked most awkwardly, with the legs bent inwards. It rose with difficulty, the wings assisting, and, when on its legs, occasionally ran for a short distance, but often fell, apparently from want of strength to move the large and heavy bones of its legs properly. It constantly endeavoured to approach the camp-fire, and it was a matter of some difficulty to keep it from a dangerous proximity to it. Its cry of 'tching-tching' was often uttered during the daytime, as if re-calling the parent bird; and when this call was answered by its keeper feigning the note 'bullen-bullen'—the native name for the Lyre Bird, which is an imitation of the old birds' cry—it followed the voice at once, and was easily led away by it. It soon became very tame, and was exceedingly voracious, refusing no kind of food, but standing ready, with widely-gaping bill, awaiting the approaching hand which held the food, consisting principally of worms and the larvæ of ants, commonly called ants' eggs, but it did not refuse bits of meat, bread, &c. Occasionally it picked up ants' eggs from the ground, but was never able to swallow them, the muscles of the neck not having acquired sufficient power to effect the required jerk and throwing back of the head. It rarely if ever partook of water. It reposed in a nest made of moss, and lined with opossum-skin, where it appeared to be quite content. While asleep the head was covered with one of the wings. When called 'bullen-bullen' it awoke, looked for several seconds at the disturber, soon put its head under the wing again, and took no notice whatever of other sounds or voices. That the young *Menura* remains for a long time in the nest is proved by the manner in which it disposes of its droppings; our young captive always went backward before dropping its dung, in order to avoid soiling the nest. It is probable that it leaves the nest in the daytime, when the warmth of the weather invites it to do so, but that during the night it remains in the nest; and if the weather should become cold the mother shelters her young, the nest being large enough to contain both."

A second species of Lyre Bird, the *Menura Alberti*, is thus described by Mr. Gould:—

"The habits of this bird are very similar to those of the *Menura superba*, but having seen and watched both on their playgrounds, I find the *Menura Alberti* is far superior in its powers of mocking and imitating the cries and songs of others of the feathered race to the *Menura superba*. Its own peculiar cry or song is also different, being of a much louder and fuller tone. I once listened to one of these birds that had taken up its quarters within two hundred yards of a sawyer's hut, and he had made himself perfect with all the noises of the homestead—the crowing of the cocks, the cackling of the hens, the barking and howling of the dogs, and even the painful screeching of the sharpening or filing of the saw. I have never seen more than a pair together. Each bird appears to have its own walk or boundary, and never to infringe on the other's ground, for I have heard them day after day in the same place, and seldom nearer than a quarter of a mile to each other. Whilst singing they spread their tails over their heads like a Peacock, droop their wings to the ground, and at the same time scratch and peck up the earth. They sing mornings and evenings, and more in winter than at any other time. The young cocks do not sing until they get their full tails, which I fancy is not until the fourth year, having shed them in four different stages. The two centre curved feathers are the last to make their appearance. They live upon small insects, principally beetles; their flesh is not eatable, being dark, dry, and tough, and quite unlike that of other birds. They commence building their nests in May, lay in June, and have young in July. They generally place their nests on the side of some steep rock, where there is sufficient room to form a lodgment, so that no animals or vermin can approach."

The following particulars respecting this species we extract from one of Dr. Bennett's interesting works on Australia :—"The locality it frequents, says Dr. Stephenson, 'consists of mountain ridges not very densely covered with brush. It passes most of its time on the ground, feeding and strutting about, with the tail reflected over the back to within an inch or two of the head, and with the wings drooping on the ground. Each bird forms for itself three or four "corroborring places," as the sawyers call them. These consist of holes scratched in the sandy ground, about two feet and a half in diameter, by sixteen, eighteen, or twenty inches in depth, and about three or four hundred yards apart, or even more. Whenever you get a sight of the bird, which can only be done with the greatest caution, and by taking advantage of intervening objects to shelter yourself from its observation, you will find it in one or other of these holes, into which it frequently jumps, and seems to be feeding; it then ascends again, and struts round and round the place, imitating with its powerful musical voice any bird it may chance to hear around it. The note of the *Dacelo gigantea*, or Laughing Jackass, it imitates to perfection. Its own whistle is exceedingly beautiful and varied. No sooner does it perceive an intruder than it flies up into the nearest tree, first alighting on the lowermost branches, and then ascending by a succession of jumps, until it reaches the top, whence it instantly darts off to another of its playgrounds. The stomachs of those I dissected,' continues Dr. Stephenson, 'invariably contained insects, with scarcely a trace of any other material. Now collectors of insects know that gravel-pits and sandy holes afford them great treats, and it appears to me that one, if not the principal use of the excavations made by this bird is to act as a trap for unwary coleopterous and other insects, which falling in cannot ascend again, and are therefore easily secured.' Mr. Strange, who met with this species in the cedar bushes which skirt Turanga Creek, Richmond River, says, 'Like the *Menura superba*, it is of a shy disposition. When alarmed or running away, it carries the tail erect, and not drooping downward like that species. I spent ten days in the midst of cedar-brushes in the hope of seeing something of its nidification, but did not succeed in finding any nest with eggs. I found, however, one large, dome-shaped nest, made of sticks placed in the spur of a large fig-tree, which the natives assured me was that of the Colevin, their name for this bird. It resembles that of *Orthonyx*, except that the inside was not lined with moss, but with litter from a large mass of parasitical plants that had fallen to the ground. The natives agree in asserting that the eggs are only laid in cold weather, by which I apprehend they mean the spring, as I shot a young specimen about four months old on the 24th of November which had the whole of the body still covered with brown and greyish down. I have seen this specimen take extraordinary leaps of not less than ten feet from the ground, on to some convenient branch, whence it continues to ascend in successive jumps, until it has attained a sufficient elevation to enable it to take flight into the gully below.'"

The WARBLERS (*Sylviadæ*) are among the smallest and most fascinating of the feathered race. They are recognisable by their short, awl-shaped beaks, powerful feet, short, rounded wings, long, variously formed tails, and usually silky plumage.

The SONG WARBLERS (*Sylvia*), the most attractive group of this family, are all little birds, having soft, silky, variously-coloured plumage and a slender body; the beak is slightly conical, strong at the base, almost as broad as it is high, hooked and slightly incised at its tip; the foot is powerful and of medium length, the toes short and strong. The wings are rounded and of moderate size, the third and fourth quills being longer than the rest; the tail, which is composed of twelve feathers, varies in its formation. Light grey predominates in the coloration of the plumage; but is varied with different shades of red and brown; the adult male and female are generally but not invariably alike.

The Song Warblers principally frequent the woodland districts of the more northerly portions of the Eastern Hemisphere, and usually prefer tracts covered with low trees and underwood to lofty forests. They almost entirely avoid mountainous regions, even should these be thickly overgrown with their favourite shrubs and bushes. Unlike the Thrushes, they rarely descend to seek for food upon the surface of the ground, nor are they apparently more at their ease when on the wing, for they frequently undertake lengthy journeys during their winter migrations, and their flight is in most instances fluttering and heavy; some few species, however, prove exceptions to this rule, as they are not only capable of careering with a rapid undulating course through the realms of air, but frequently, when about to pour forth their song, soar to a considerable altitude. It is in the depths of the thicket, however, that the members of this family best display the wonderful agility with which they have been endowed. No tangled brake, no mass of foliage, however dense, is impervious to these little birds. With lowered head, and wings and feet drawn in, they creep through the smallest apertures with astonishing dexterity, and make their way with an ease and rapidity that is almost unequalled in the whole feathered creation. Unlike the Thrush or Shrike, they never agitate their tail and pinions when in motion; but, if angry or excited, display the crest that decks their head, and slightly raise their wings above the back. As regards their vocal powers, they are, for the most part, highly gifted. Their senses are keen, their intelligence remarkable, and their dispositions shy and cautious. Although usually peaceable during the breeding season, they frequently exhibit considerable fury and violence towards any suspected rival or enemy, that contrasts strangely with the tenderness and devotion they display while endeavouring to win the attention of their mates, or ministering to the wants of their little family. More than one brood is usually produced in the year, each of which consists of from four to six eggs, of a white hue, spotted with grey or brown. The flat and prettily-formed nest is placed amongst the bushes, or on a branch, and constructed of stalks, cottony wool, spiders' webs, green moss, and fibres, lined with horsehair, the whole being woven together so lightly that the eye can penetrate its interior. In some instances these fragile little structures are fastened so insecurely on their foundations as to be liable to be dislodged by the wind. During the summer months the Song Warblers subsist almost entirely upon insects, larvæ, caterpillars, and similar fare, and in autumn devour large quantities of berries and fruit. They are often very destructive to cherry-trees, and in Southern Europe do great damage to the crops of ripe figs.

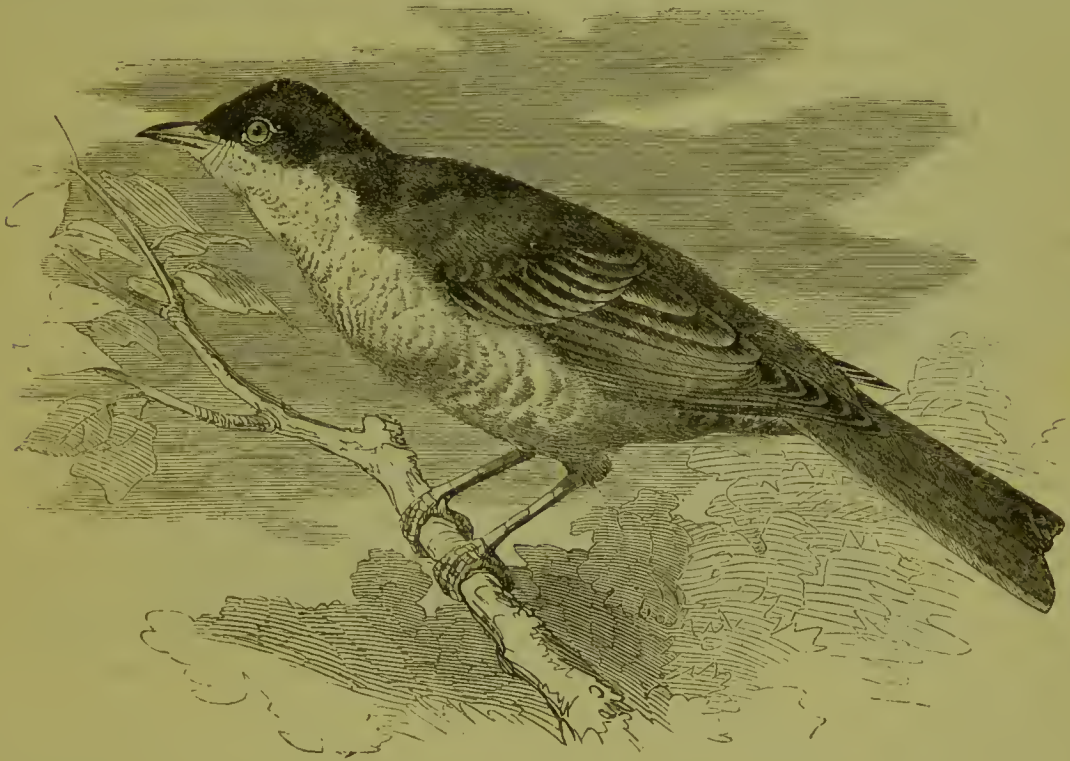
The TRUE SONG WARBLERS (*Curruca*) are distinguished from their congeners by the comparative length of their pointed wings, in which the third quill is longer than the rest, also by their moderately-sized and almost or quite straight tail.

THE SPARROW-HAWK WARBLER.

The SPARROW-HAWK WARBLER (*Curruca nisoria*), the largest European member of this group, is seven inches long and eleven broad; the wing measures three and a half, and the tail three inches. Upon the upper part of the body the feathers are deep grey, usually shaded with rust-red; the under side is greyish white, decorated with dark grey crescent-shaped spots, which are most clearly defined in the plumage of the male bird; the quills are brownish grey, edged with a paler shade; the tail-feathers deep grey, with light borders. The eye is bright gold colour, the beak brownish black, and yellowish pink at its base; the foot is light grey. In the young, the crescent-shaped spots on the breast are but slightly indicated.

This species is numerously met with in most European countries that lie between Southern Sweden and Central Asia; it is, however, unknown in England, and is extremely rare both in Spain and Greece. Pasture lands, abounding in shrubs and bushes, on the banks of large rivers, are

the localities it almost exclusively frequents ; it never occupies lofty trees, except as temporary resting-places during its winter migrations. In its general habits and movements the Sparrow-hawk Warbler closely resembles most other members of its family ; it flies with difficulty, and comes but seldom to the ground, but displays the utmost agility in creeping through the densest bushes, or in hopping from branch to branch. Its song is rich, varied, and uttered constantly, almost throughout the entire day. The period of incubation commences as soon as the birds have returned to their usual spring haunts, and is accompanied by repeated outbursts of jealousy and violence on the part of the male, who not only frequently engages in fierce conflicts with his actual rivals, but flies assiduously round his mate while she carries on the work of building their little dwelling, in order to keep the coast



THE SPARROW-HAWK WARBLER (*Curruca nisoria*).

clear from even a distant intruder on her privacy. The nest is usually placed in a hedge or bush, at from two to four feet above the ground, and is in every respect similar to that above described ; the eggs, from four to six in number, are oval, with thin greyish shells, spotted with grey or olive brown. Both parents exhibit great timidity whilst occupied in the care of their young, and quit the nest at the first alarm of danger, the female frequently endeavouring to divert attention from her brood by feigning to be lame or suffering. If disturbed while occupied in building, it is not uncommon for a pair to leave the spot and re-commence their preparations elsewhere ; indeed, in some instances, an unusually timid couple have been known to desert their brood when terrified by the approach and investigations of a stranger.

THE ORPHEUS WARBLER.

The ORPHEUS WARBLER (*Curruca Orphea*), the European species next in size to that above described, is six inches and a half long, and nine and a quarter broad ; the wing measures three inches, and the tail two inches and three-quarters. The female is two lines smaller than her mate. The entire upper part of the back is dark grey, shaded with brown, the top of the head and nape

are brown or greyish black, the sides of the breast light rust-red, the rest of the under-side is white; the quills and tail-feathers are blackish brown, the outer web of the exterior tail-feathers white, as is also a conical spot on the extremity of the inner web and on the tip of the feathers next in order. The eye is light yellow, the upper mandible quite black, and the bare circle around the eyes bluish grey. The female is paler than her mate, particularly about the region of the head. This species inhabits the south of Europe, and only occasionally wanders to the central portions of other continents. Some writers are of opinion that it remains in Greece throughout the entire year, but this statement we are satisfied, from our own observation, is incorrect; there, as in other southern countries of Europe, they generally appear about April, and migrate to Central Africa and India at the beginning of autumn. Jerdon tells us that they are numerous met with in Southern India during the winter, and we have ourselves seen them at that season in Africa, near the Blue River. Unlike the generality of Warblers, these birds usually frequent trees rather than underwood or bushes, and especially delight in groves of figs and olives, or pine forests. Throughout all the well-watered and highly-cultivated districts of their native lands they are by no means rare, but are seldom seen in the vicinity of mountains. Their voice is loud, sonorous, and agreeable. The nest of this species is usually placed in full view, upon the bough of a tree, and is somewhat thicker and more substantially constructed than that of most other Warblers; the interior is variously lined, occasionally with delicate fibrils of grape-vines or similar materials. Thienenmann mentions an instance in which fish-scales were, strangely enough, employed for this purpose. The brood consists of five glossy eggs, of a delicate white or greenish-white colour, spotted with violet grey or yellowish brown; the latter spots are sometimes entirely wanting. The female alone broods, while her mate sits upon a neighbouring tree or branch, and cheers her labours with a constant flow of song. The young are tended by both parents for some time after they are fully fledged, and go forth alone into the world immediately after the first moulting season.

The following notice of the occurrence of this species in Yorkshire may be found in the "Zoologist" for 1849, from the pen of Sir William Milner, of Nunappleton:—"The species was a female, and was observed in company with its mate for a considerable time before it was shot. The other bird had a black head, and the description I received left no doubt on my mind that it was a male *Sylvia Orpheus*. The bird obtained, of which I send you a description, was shot in a small plantation near the town of Wetherby, on the 6th of July, 1848, and had the appearance of having been engaged in incubation, from the state of the plumage." "Mr. Graham, a bird preserver of York," continues Sir W. Milner, "hearing that a very uncommon bird had been shot, went over to Wetherby, and fortunately obtained the specimen for my collection. This bird had the beak black and very strong; the whole upper part of the plumage dark ash-coloured brown; the outer feather of the tail white; the second on each side edged with dirty white, the rest of a brownish black; chin dirty white; throat and belly brownish white; under surface of the wings and vent light brown; legs very strong, toes and claws black. The whole length six inches three lines."

THE GREATER PETTICHAPS.

THE GREATER PETTICHAPS, or GARDEN WARBLER (*Curruca* or *Sylvia hortensis*), is six inches long, and nine and three-quarters broad; the wing measures three inches, and the tail two and a half; the female is somewhat smaller than her mate, but resembles him in colour. The entire upper portion of the body is olive-grey, the throat and belly are of a whitish shade, and the rest of the under side light grey. The quills and tail are dark grey, the eye light greyish brown, the beak and feet dull grey.

This species inhabits the whole of Southern Europe, extending in a northerly direction as far as

68° north latitude ; in France and Italy it is especially numerous, but is comparatively rarely met with in Spain, though it is known to breed in that country. It usually arrives in England and Scotland about April, and leaves early in September. Unlike most of its congeners, the Garden Warbler is extremely quiet and peaceful in its demeanour, and, though cautious and vigilant, by no means timid. It usually frequents woods, gardens, and orchards, and may constantly be seen disporting itself among the fruit trees, in utter indifference to the presence of the owners.

Macgillivray, quoting from Sweet, says :—"It visits us in the spring, about the end of April or the beginning of May, and its arrival is soon made known by its very loud and long song. It generally begins very low, not unlike the song of the Swallow, but raises it by degrees, until it resembles the song of the Blackbird, singing nearly all through the day and the greater part of the



THE ORPHEUS WARBLER (*Curruca Orphea*).

time it stays with us, which is but short, as it leaves us again in August. In confinement it will sing nearly all through the year, if it be treated well. In a wild state it is generally found in gardens and plantations, where it feeds chiefly upon fruits, and will not refuse some kinds of insects ; it is very fond of the larva or caterpillar that is often found upon cabbage plants, the produce of *Papilio brassicae*, and I know no other bird of the genus that will feed on it. Soon after its arrival here the strawberries are ripe, and it is not long before it finds them out ; the cherries it will begin before they are quite ripe, and I know not any kind of fruit or berry which is wholesome that it will refuse. It generally tastes the plums, pears, and early apples, before it leaves us ; and, when in confinement, it also feeds freely on elder, privet, or ivy berries ; it is also partial to barberries."

Mr. Neville Wood has seen it "darting into the air to catch insects in the same manner as the Spotted Flycatcher (*Muscicapa grisola*), often taking its stand on a dahlia stake, watching for its prey, darting aloft with inconceivable rapidity, with its bill upwards, catching the fly with a loud snap of the bill, and immediately returning to its station to renew the same process with similar success."

In an extract given by Mr. Thompson, of Belfast, from the MS. of the late John Templeton, Esq., he says :—"On the 21st of May I had the pleasure of seeing this bird, to whose haunt in my garden I was attracted by its pleasing melody. It was not very shy, coming near enough to be distinctly seen, but was extremely restless, flitting every moment from place to place, and only stationary on the branch while it gave out its song. The male continued to sing until the young were reared, when his song ceased for about a fortnight; then it was again renewed, on the construction, I suppose, of a new nest."

"As a songster," says Yarrell, "it ranks with the Blackcap; and a good judge of the comparative value of the songs of our birds has described that of the Garden Warbler as a continued strain of considerable modulation, sometimes lasting for half an hour at a time without a pause. The song is wild, rapid, and irregular in time and tone, but the rich depth is wonderful for so small a throat, approaching in deep mellowness even to that of the Blackbird."

The nest is made in bushes and trees, at various distances from the ground, and is so slightly constructed as to render it a matter of wonder how it can possibly support the five or six eggs that constitute a brood. It is formed externally of strong bents, lined with finer bents, fibrous roots, and horsehair. The situation in which it is placed is carelessly selected, and it is no uncommon occurrence for the little structure to fall to the ground, not only during a high wind, but from the mere weight of the parents as they enter or leave the nest. Strangely enough, though they thus appear to adopt the most unsuitable situations for building, few birds are so capricious as to their requirements in this respect, and it frequently happens that a pair of Garden Warblers will lay the foundation of several nests, often within a very limited space, before they satisfy their peculiar fancies. Both parents co-operate in the business of incubation; the male, however, only sits during the middle of the day; the nestlings are hatched within a fortnight, and in another fortnight can leave the nest, and climb nimbly about the surrounding branches, though unable to fly. If undisturbed, this species breeds but once in the year.

THE LESSER WHITETHROAT.

The LESSER WHITETHROAT (*Curruca garrula*) does not exceed five inches and one-third in length, and eight in breadth; the wing measures two inches and a half, and the tail two inches and a quarter. In this species the top of the head is grey, and the back brownish grey; the wing-feathers are of a still deeper grey, edged with a pale shade; the entire under side is white, tinted with yellowish red on the sides of the breast; the cheek-stripes are dark grey; the exterior tail-feathers white; the rest being only surrounded with a white border. The eyes are brown, the beak dark grey, and the legs bluish grey.

This Whitethroat inhabits the whole of Central Europe, usually appearing in England about April; and, according to Jerdon, is met with throughout India and in many parts of Central Asia, during the course of its winter migrations. Woods, gardens, and orchards are its favourite resorts, and these it boldly visits, not merely in the neighbourhood of human habitations, but in the very centre of towns and villages.

"The food of this species," as Mr. Yarrell informs us, "is very similar to that sought for by the Common Whitethroat—namely, insects in their various states, the smaller fruits of many different sorts, for which it visits the gardens, and, later in the season, it feeds on the berries of the elder and some others. It is not, however, so easy to preserve this bird in health during confinement as the Common Whitethroat."

Colonel Sykes obtained examples in the Deccan which only differed from the English specimens in having a reddish tint on the white of the under surface, but Mr. Blyth mentions that he has seen

this tint on specimens obtained in this country, and Mr. Yarrell quotes part of a letter received from the Rev. W. F. Cornish, of Totnes, which says, "I have reared the Lesser Whitethroat, two males and a female; the males had a beautiful tinge of carmine on the breast."

Mr. Hepburn, who was the first to discover this species in East Lothian, has furnished the following notice respecting it:—"On the 7th of May, 1838, I first heard the song of the Lesser Whitethroat (*Sylvia curruca*). In its habits it is shy and retiring; it loves to frequent copses and gardens. When you approach its haunts it conceals itself in the thickest shade, where it utters its alarm-note, distending its throat a little. One day in July, when lying in wait for Wood Pigeons in a ditch beneath the shade of some hedge-row trees, I observed one sporting amongst the hawthorn twigs. He once sprung into the air, caught an insect, and then began to sing in a very low voice, ending in a very shrill, tremulous cry. House Sparrows, Hedge Chanters, Chaffinches, Wagtails, Willow Wrens, Wood Wrens, White Throats, dart into the air in the very same way. The little fellow ceased his song when he observed me, and sought the middle of the hedge, where he remained till I left my place. I teased him thus for about twenty minutes. He had young ones at the time. It was about the beginning of July that I observed that both the Greater and Lesser Whitethroats made excursions into fields of growing wheat and beans. In the former case they settle on the stalk near to the ear, which they diligently examine. The Wheat Fly (*Cecidomyia tritici*) at this season deposits its eggs between the glumes of the corn, and we may reasonably suppose that the White-throats devour this destructive insect, in doing which they must confer a great benefit on the farmer, as far as their influence extends. After this I shall never grudge them a few currants. But this is not all; for, besides destroying vast numbers of other insects which feed on the honey contained in the nectary of the bean, I have seen their little mouths filled with the black or collier aphides, which often commit much damage by adhering to the top of the field bean and sucking its juice, so that sometimes fruit, leaves, and stem perish. It prefers the red currant to all other fruits. It departs about the 8th or 10th of September."

"The louder notes of this bird," says Mr. Yarrell, "have nothing particular in their tone to recommend them; but if approached with sufficient caution to prevent alarm, or when kept in confinement, they may be heard to utter a low, soft, and pleasing whistle, which is almost incessant; so much so as to have induced the application of the epithets of *garrula* and *babillard*, as terms of specific distinction. The nest is usually placed upon a thick bush near the ground, and resembles that made by other members of the family. The eggs are from four to six in number, round, and pure white or bluish green, marked with violet-grey or yellowish-brown spots, most thickly strewn over the broad end. Both parents assist in the process of incubation, and tend and protect their young with the utmost care and assiduity; but, like the species already described, will often, if disturbed when brooding, desert not merely their nest, but the eggs contained therein. We have frequently remarked that the same self-sacrificing devotion exhibited by this species to its own nestlings is also displayed towards the young Cuckoos that are sometimes reared involuntarily as inmates of the little family."

THE CAPIROTE, OR BLACK-CAP.

The CAPIROTE, or BLACK-CAP (*Curruca atricapilla*), one of the most highly-endowed of woodland songsters, is greyish black upon the upper parts of the body; the under side is light grey, with the throat of a still paler shade. In the adult male the crown of the head is deep black, in the females and young reddish brown; the eyes are brown, the beak black, and the feet dark grey. This species is five inches and ten lines long, and eight inches broad; the wing measures two inches and a half and the tail two and a quarter; the size of the female is the same as that of her mate. It is at

present uncertain whether the REDHEAD (*Curruca ruficapilla*) is to be regarded as merely a variety of this bird, or as an entirely different species.

The Capirote is found throughout the whole of Central Europe, and during its migration visits the southern portion of that continent ; it is also very numerous met with in the Canary Islands, and has occasionally been seen in Soudan. In most parts of Europe it generally makes its appearance about April, and leaves again early in the autumn.

"When the Blackcap first arrives in this country, its chief food," says Mr. Sweet, "consists of the early ripened berries of the ivy, and where these are there the blackcaps are first to be heard, singing their melodious and varied song. By the time the ivy-berries are over, the little green larvæ of the small moths, rolled up in the young shoots and leaves, will be getting plentiful ; these then constitute their chief food until strawberries and cherries become ripe ; after that there is no fruit or berry that is eatable or wholesome that they will refuse. When they have cleared away the elder-berries in autumn, they immediately leave us."

This species usually produces two broods in the season, and places its comparatively well-built nest within the shelter of a thorny bush or leafy shrub. The eggs, from four to six in number, are of an oval shape, smooth, flesh-coloured, and marked with reddish-brown spots.

"The male birds of several species of Warblers," says Mr. Yarrell, "share with their females the task of incubating the eggs ; this is particularly the case with the male Blackcap, readily known from the female by his black head. So gratified is he, apparently, when performing this part of his duty, that he will frequently sing while thus occupied, sometimes, perhaps, occasioning the destruction of his hopes. A writer in the 'Magazine of Natural History' says he has several times been led to the discovery of the eggs by the male singing while sitting. The female, when taking her turn on the nest, is occasionally fed by her mate. Generally, however, male birds neither sit so steady, or feed the young so assiduously, as the females."

Bolle tells us that if the nestlings lose their mother her bereaved mate will alone undertake the care of his hungry young ones. The general habits and demeanour of the Blackcap so closely resemble those of other members of this family that further description is unnecessary. Nevertheless, we must allude more particularly to the peculiarities of its beautiful song, which has been described by Mr. Yarrell :—

"The Blackcap has in common a full, deep, sweet, loud, and wild pipe, yet that strain is of short continuance, and his motions are desultory ; but when the bird sits calmly, and engaged in song in earnest, he pours forth a very sweet but inward melody, and expresses a great variety of soft and gentle modulations, superior, perhaps, to any of our Warblers, the Nightingale excepted. While this species warbles the throat is wonderfully distended."

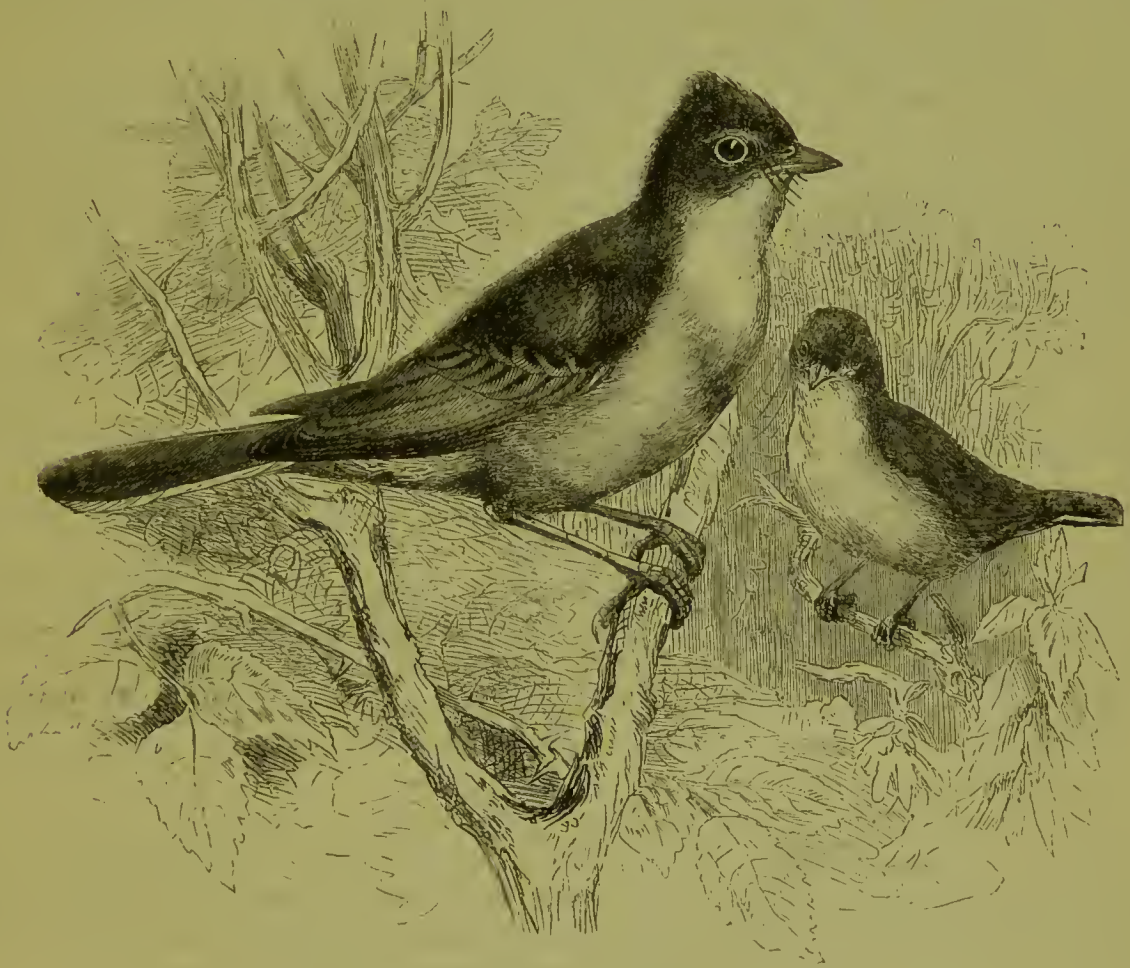
Bolle mentions a tame Capirote kept by a lady in Ciudad de los Palmas, the chief town of the Canaries, that was the wonder and admiration of the whole neighbourhood, on account of the extraordinary clearness with which it had learnt to repeat the words *mi niño chicerito* (my darling little pet), a phrase daily employed by its mistress, as she gave her favourite its food. Large sums were offered by several persons, in the hope of obtaining so great a curiosity as a singing bird that could speak, but his owner was not inclined to part with her treasure ; and after tending it for several years with the utmost watchfulness, had the grief to lose it by poison, administered, it was supposed, by some one whose offers had been refused. When in confinement this species soon becomes tame.

Beckstein says, "A young male which I had put into a hothouse for the winter was accustomed to receive a meal-worm from my hand every time I entered. This took place so regularly that immediately on my arrival he placed himself near the little jar where I kept the meal-worms. If I pretended not to notice this signal, he would take flight, and, passing close under my nose, imme-

diately resume his post ; and this he repeated, sometimes even striking me with his wing, till I satisfied his wishes and impatience."

THE WHITE THROAT.

The WHITE THROAT (*Curruca cinerea*) is five inches and three-quarters long, and eight inches and a quarter broad ; the wing and tail each measure two inches and a half. This species is at once recognisable by the slender body, comparatively long tail, white throat, and the reddish border that surrounds its upper wing-covers. The head, nape, back, and rump are yellowish grey,



THE WHITE THROAT (*Curruca cinerea*).

shaded with a faint reddish tinge ; the under side is white, intermixed with reddish grey on the breast ; the quills, tail, and feathers that form the wing-covers are greyish black, the latter being moreover broadly bordered with rust-red ; the eye is brownish yellow, the upper mandible deep grey, the lower reddish grey, and the legs greyish yellow. In the female and young birds these various colours are not so clearly defined as in the plumage of the adult male. These Warblers are met with in North-western Asia and throughout the larger portion of Europe, from Sweden and Russia, as far south as the northern parts of Spain. They are numerous in Great Britain, where they arrive in about the third week in April ; and are only seen in Southern Spain and Greece during the migrating season, when they wander even into Africa. We ourselves have shot them in Eastern Soudan, and other naturalists have found them in the western portions of the African continent. Like other

members of their family, they display extraordinary dexterity in making their way through the most intricate masses of foliage or the very innermost recesses of their favourite brushwood, and, under ordinary circumstances, rarely venture forth upon the outer branches of their leafy retreats. Despite their unusual shyness, they are, however, occasionally bold enough to extend their foraging excursions as far as the neighbourhood of fields of corn, and in Southern Europe they especially favour the crops of ripe maize. During their flight they generally keep near the ground, and, though unable to continue their course for any great length of time, propel themselves through the air with rapid and powerful strokes of their wings. The song of this species, which, though varied, is decidedly inferior in quality to those of many of its congeners, is frequently poured forth when the bird is on the wing, at an altitude of some twenty or forty yards above the ground, or as it rises fluttering, or sinks with closed pinions towards the earth.

"The note of the White Throat," says Gilbert White, "which is continually repeated, and often attended with odd gesticulations on the wing, is harsh and unpleasing. These birds seem of pugnacious disposition, for they sing with an erected crest and attitudes of rivalry and defiance, are shy and wild in breeding-time, avoiding frequented neighbourhoods, and haunting lonely lanes and commons—nay, even the very tops of the Sussex Downs, where there are bushes and coverts; but in July and August they bring their broods into gardens and orchards, and make great havoc among the summer fruits."

"One that I possess," says Mr. Sweet, "will sing for hours together against a Nightingale, now, in the beginning of January, and will not suffer itself to be outdone. When the Nightingale raises its voice, it also does the same, and tries its utmost to get above it. Sometimes in the midst of its song it will run up to the Nightingale, stretch out its neck as if in defiance, and whistle as loud as it can, staring it in the face. If the Nightingale attempts to peck it, away it flies in an instant, darting round the aviary, and singing all the time. These birds are easily taken in a trap baited with a living caterpillar or butterfly. One that I caught last spring sung the third day after being placed in confinement, and continued to sing all through the summer; but this was most likely in consequence of a tame one being with it, which also sung at the same time."

The nest is usually constructed in thick bushes or in long grass, and is often placed quite close to the ground, or in the most unlikely situations—the iron-work on a lamp in Portland Place and in a gate at Hampton Court Palace are instanced by Mr. Jesse as having been employed for this purpose. Externally, the walls of the nest are formed of grass, often interspersed with wool, and lined with some delicate material. The eggs, from four to six, are laid at the end of April. These differ remarkably from each other, not only as to size, but in form and hue, some being white, yellow, grey, or greenish, while others are slate colour, yellowish brown, or yellowish green, streaked, spotted, or marbled with various darker shades. Two broods are always produced within the season.

THE SPECTACLED WARBLER.

The SPECTACLED WARBLER (*Curruca conspicillata*) is five inches long and six and three-quarters broad; the wing and tail each measure about two inches. The head of this species is dark grey; the upper part of the body of a lighter grey, shaded with rust-red; the under side and quills are grey; the outer web of the secondaries and of the feathers on the upper wing-covers broadly edged with rust-red; the outer web of the exterior tail-feathers is white, almost to the root; the inner web of all the tail-feathers is decorated with a more or less distinctly indicated triangular patch. The light reddish-brown eye is surrounded by a white ring; the feathers above the ears are grey; the beak flesh-pink at its base, and black at the tip; the foot is either yellowish pink or reddish grey. The young are distinguishable from the adult birds by the pure grey colour of their breast. In this

species the fourth wing-quill is the longest. The Spectacled Warblers inhabit all of the more southern countries of Europe, and usually remain throughout the year in their native lands. In their habits they closely resemble the species above described, but are generally met with in districts overgrown with low bushes and thistles. We learn from Wright that two broods are produced within the year, the first eggs being laid about February.

THE WHITE-BEARDED WARBLER.

The WHITE-BEARDED WARBLER (*Curruca leucopogon*) is one of the most attractive members of this family; the entire upper portion of the body is of a beautiful dark grey, the under side greyish white, the throat bright rust-red, adorned with a narrow white line, which passes from the base of the beak to the shoulders; the reddish eye is surrounded by a circle of red feathers, while those over the ears are brown; the quills and tail-feathers are dark brown, the outer web of the exterior tail-feathers being partially white, and the inner web decorated with a triangular white spot; the other feathers are merely edged with white, the eyelid is light red, the beak greyish black, the upper mandible tipped with reddish grey; the foot is also of the latter shade. The females and young are similarly coloured, but are without the red feathers on the throat. This species is four inches and three-quarters long, and six inches and three-quarters broad; the wing measures two inches and a quarter, and the tail two inches and one-sixth.

The White-bearded Warblers inhabit the dwarf woods of oleanders, evergreens, cistus, and elm that clothe some of the mountainous districts of Southern Europe and North-western Africa. Within and around these bosky retreats they seek their favourite insect fare with the mouse-like movements that characterise their family; but, unlike the species above mentioned, they are at little pains to conceal themselves at the approach of a stranger, and are generally to be seen perching in pairs upon the outer branches of their favourite shrubs, whilst they carry on their chase, now darting into the air to snap up a passing insect, now diving within the foliage to seize an unlucky beetle or caterpillar, as it takes its morning walk upon the leaves. The nest of this species is thicker and much more neatly constructed than those already described; the four or five eggs that form a brood have a dirty white shell, spotted with yellowish brown and olive green; the markings generally form a wreath at the broad end.

THE FIRE-EYED WARBLERS.

The FIRE-EYED WARBLERS (*Pyroptalma*), as they have been called by Bonaparte, on account of their bare and brightly coloured eyelids, represent a group recognisable from the True Warblers by the comparative shortness of their very rounded wing, in which the third and fourth quills are of equal length, and also by the long, decidedly graduated tail and thick hair-like plumage.

RÜPPELL'S WARBLER.

RÜPPELL'S WARBLER (*Curruca Rüppellii*) is of a dark grey on the upper parts of its body, and white beneath; the sides are shaded with grey, the rest of the under side with a reddish tinge; the head and entire throat are deep black, the cheek-stripes ash grey, and a streak that passes from the base of the beak and divides the black throat from the breast is pure white. The quills and feathers of the smaller wing-covers are brownish black, the latter bordered with white; the centre tail-feathers are black; the second, third, and fourth marked with white on the inner web, and those at the exterior are entirely white. The eye is light brown, the beak horn-colour, and the feet red. This species is five inches and a half long, and eight and a half broad; the wing measures eight inches and a half. The female is smaller and paler than her mate.

We are almost entirely without particulars as to the life of this bird, except that it inhabits South-eastern Europe, and usually frequents the bushes that grow in sandy or barren districts. It is numerous met with in Palestine, Asia Minor, and the islands of the Red Sea. We have also seen it in Egypt, though it usually only visits that country during the migratory season.

THE BLACK-HEADED FIRE-EYED WARBLER.

The BLACK-HEADED FIRE-EYED WARBLER (*Pyroptalma melanocephala*), the most numerous species of this group, is five inches and three-quarters long, and but seven broad; the wing measures at most two inches and one-sixth, and the tail two inches and a half. The upper portion of the body is greyish black, the under side white, shaded with red; the head is of velvety blackness, the throat



THE SPECTACLED WARBLER (*Curruca conspicillata*).

pure white; the wings and tail are black. The outer web of the first and the inner web of the next tail-feathers are white; the eye is brownish yellow, and its lid brilliant red; the back blue, and the feet reddish grey.

These birds inhabit the whole of Southern Europe, even to its smallest islands, and are especially numerous in Greece, Italy, and Spain; everywhere they frequent any situation covered with shrubs and bushes, and remain throughout the entire year within the limits of their native lands. Naumann tells us that the song of this species, which is very varied, and consists of prolonged piping notes, is constantly uttered both upon the wing and as the bird rises or sinks rapidly through the air.

When singing in the trees the male usually selects a prominent branch, and accompanies his performance by agitating his tail, erecting the feathers that form his crest, and bowing his head repeatedly; should any unusual sound occur, the bold little creature is at once on the alert to discover the meaning of the noise, and invariably hurries to the spot to mingle in every fray or take his part in any dispute that arises among his feathered companions. The female is not of an

inquisitive and intrusive disposition, and, as she usually remains quietly hidden among the sheltering branches, is but seldom seen. During the breeding season, the male is even still more pugnacious and determined. He resents all intrusions upon his privacy by approaching almost close to the unwelcome visitor, loudly uttering his shrill, clear call with such rapidity as to make it appear but one prolonged note. In such moments of excitement the black crest upon his head is raised aloft, and the bare circles round the eyes gleam with fiery brilliancy. The nest, which is substantial in its structure, is usually placed in a bush or tree, and carefully concealed from view. The four or five eggs have a dirty white shell delicately marked with extremely fine dark specks, sometimes they are also decorated with blue markings and a wreath of olive-brown spots at the broad end. We have found nests containing newly-laid eggs from March to August. After the breeding season is over the parents fly about for some time in company with their young, and occasionally they remain associated during the winter.

THE SARDINIAN FIRE-EYED BLACK-HEAD.

The SARDINIAN FIRE-EYED BLACK-HEAD (*Pyropthalma sarda*), as its name implies, is a native of Sardinia; it is likewise met with in Malta, Greece, and the neighbouring islands, also, according to Homeyer, upon the Balearic Islands. In this species the head, nape, and back are blackish grey, lightly tinted with red; the under side is pale grey, the throat whitish; the quills and tail-feathers are brownish black edged with reddish grey, except the two exterior tail-feathers, which are bordered with white on the outer web. The eye is nut brown, the bare eyelid yellowish pink, and the beak black, except at the yellow base of the lower mandible; the foot is light grey. The colours of the female are somewhat paler. Salvatori tells us that this interesting Warbler is one of the commonest birds in Sardinia, and that it frequents all parts of the country, whether mountain or plain, provided the ground is covered with bushes or heather. Homeyer speaks in the same terms of such as inhabit the Balearic Isles, and tells us that their movements closely resemble those of mice, as they scurry over the ground from stone to stone and shrub to shrub; now running into a hole, now closely examining every little twig of a bush, with a rapidity and dexterity far exceeding even that of the Wren. During the whole time the bird is in motion the tail is brandished aloft with most grotesque effect. The voice much resembles that of a male Canary in some of its notes, while others are like the sound of a tiny bell; the call-note is exactly similar to that of the Redbacked Shrike. The nest is placed in thick bushes, and is formed of grass, lined with horsehair and a few feathers; the interior is deep, and the walls very thin. The four or five eggs have a greenish-white shell, clouded with yellowish green, or marked with spots of various shades and with black streaks; in size they resemble those of the Goldfinch. The plumage of the young is like that of the parents, except that the head is paler, and the eyelid only slightly touched with red. Three broods are produced within the year, the first being laid in August. This species does not migrate.

THE PROVENCE FIRE-EYED WARBLER.

The PROVENCE FIRE-EYED WARBLER, called in England the DARTFORD WARBLER (*Pyropthalma Provincialis*), a species nearly allied to the above, is dark grey on the upper portion of its body, and deep red on the under side, streaked upon the throat with white. The quills and tail-feathers are brownish grey, the four exterior tail-feathers having white tips; the eye is light brown, its lid bright red; the beak black, with the exception of the base of the under mandible, which is of a reddish hue, as is the foot. The length of this bird is from four inches and three-quarters to five inches, and its breadth from six inches to six and a quarter. The wing measures two inches, and the tail from two inches and a quarter to two inches and a half. This beautiful active little Warbler inhabits not only

the most southern part of Europe, but is also met with in Great Britain, Asia Minor, and North-western Africa. Hedges, shrubs, and brushwood are its favourite haunts, and in them it is to be seen hopping briskly about in search of insects, or perching at the end of a branch while it carols forth its blithe song, accompanying the notes by gesticulations with its tail, and a display of the feathers on its throat. Should its quiet retreat be disturbed by an unusual sound, the vigilant little minstrel is at once silent, and after a momentary survey of surrounding objects from the end of a projecting bough, promptly retires to seek safety amid the densest part of the foliage. "The male," as Mudie informs us, "often hovers about the bushes, uttering his chirping cry, which, being rather feeble and hurried, can scarcely be termed a genuine warble. At these times, from the thickness of the head and neck, the long tail, and the short and rounded wings, the bird has some resemblance to a dragon-fly. A spy-glass must be used when observing him, for if one venture near he instantly drops into the bush, where it is in vain to search for him; and the alarm-note he then utters is not unlike the cry of some of the field-mice."

This bird was first seen in England by Pennant, who, having killed his specimens in the neighbourhood of Dartford, gave it the name of the Dartford Warbler. Since that time it has been found on furzy commons in several of the southern counties, and been proved to build and reside throughout the year in this country. Colonel Montague, who met with this bird in Devonshire, gives the following account of his search after its nest:—"Mr. Stackhouse, of Pendennis, assured me that his brother had observed these birds for several years to inhabit furze near Truro. This information redoubled, if possible, my ardour, and I visited a large furze bush in my neighbourhood, where I had seen them the previous autumn, and upon close search, on the 16th of July, three old birds were observed, two of which had young, as evidenced by their extreme clamour and by frequently appearing with food in their bills. On the 17th my researches were renewed, and, after three hours' watching the motions of another pair, I discovered the nest with three young; it was placed among the dead branches of the thickest furze, about two feet from the ground, slightly fastened between the main stems, not in a fork. On the same day a pair were discovered carrying materials for building, and, by concealing myself in the bushes, I soon discovered the place of nidification, and, upon examination, I found the nest was just begun. As early as the 19th the nest appeared to be finished; but it possessed only one egg on the 21st, and on the 26th it contained four, when the nest and eggs were secured. The nest is composed of dry vegetable stalks, particularly goose grass, mixed with the tender dead branches of furze, not sufficiently hard to become prickly. These are put together in a very loose manner, and intermixed very sparingly with wool. In one of these nests was a single Partridge's feather. The lining is equally sparing, for it consists only of a few dry stalks of some species of *carex* without a single leaf of the plant, and only two or three of the panicles. This thin flimsy structure, which the eye pervades in all parts, much resembles the nest of the Whitethroat. The eggs are also somewhat similar to those of the Whitethroat, weighing only twenty-two grains; like the eggs of that species, they possess a slight tinge of green; they are fully speckled all over with olivaceous brown and cinereous, on a greenish-white ground, the markings becoming more dense and forming a zone at the larger end. The young were considered no small treasure, and were taken as soon as the proper age arrived for rearing them by hand, which is at the time the tips of the quills and the greater coverts of the wings expose a portion of the fibrous end. By experience grasshoppers (which at this season of the year are to be procured in abundance) are found to be an excellent food for all insectivorous birds; these, therefore, at first were their constant food, and, after five or six days, a mixture of bread and milk, chopped boiled meat, and a little finely powdered hemp and rape seed, made into a thick paste, to wean them from insect food by degrees; this they became more partial to than even grasshoppers, but they afterwards preferred bread and milk, with pounded hemp

seed only, to every other food, the smaller house or window flies excepted. Before these birds left their nest I put them into a pair of scales, and found that they weighed two drachms and a quarter each. At this time they ate in one day one drachm and a quarter each, so that in two days each consumed more than its own weight. Such a repletion is almost incredible, and doubtless greatly beyond what the parent birds could usually supply them with, which, by observation, appeared to consist of variety, and, not unfrequently, small *Phælenæ*; their growth, however, was in proportion to the large supply of food. This interesting little family began to throw out some of their mature feathers on each side of the breast about the middle of August, and the sexes became apparent. At this time they had forsaken their grasshopper food, feeding by choice on the soft victuals before mentioned. The nestling attachment of these little birds was very conspicuous towards the dusk of the evening; for a long time after they had forsaken the nest they became restless, and apparently in search of a roosting-place, flying about the cage for half an hour, or until it was too dark to move with safety, when a singular soft note was uttered by one which had chosen a convenient spot for the night, at which instant they all assembled, repeating the same plaintive cry. In this interesting scene, as warmth was the object of all, a considerable bustle ensued, in order to obtain an inward berth, those on the outside alternately perching upon the others, and forcing in between them; during this confusion, which sometimes continued for a few minutes, the cuddling note was continually emitted, and in an instant all was quiet. Nothing can exceed the activity of these little creatures; they are in perpetual motion the whole day, throwing themselves into various attitudes and gesticulations, erecting the crest and tail at intervals, accompanied by a double or triple cry, which seems to express the words 'Cha! cha! cha!' They frequently take their food while suspended to the wires with their heads downwards, and not unusually turn over backwards on the perch. The males, of which there were three out of the four, began to sing with the appearance of their first mature feathers, and continued in song all the month of October, frequently with scarcely any intermission for several hours together; the notes are entirely native, consisting of considerable variety, delivered in a hurried manner, and in a much lower tone than I have heard the old birds in their natural haunts. This song is different from anything of the kind I ever heard, but in part resembles that of the Stone Chat. The Dartford Warbler will sometimes suspend itself on wing over the furze, singing the whole time, but is more frequently observed on the uppermost spray in vocal strain for half an hour together."

The same habits were observed by "Rusticus," of Godalming, who, writing in "Loudon's Magazine," says:—"Its habits are very like those of the little Wren; and when the leaves are off the trees, and the chill winter winds have driven the summer birds to the olive gardens of Spain, or across the Straits, the Furze Wren, as it is there called, is in the height of its enjoyment. I have seen them by dozens skipping about the furze, lighting for a moment on the very point of the sprigs, and instantly diving out of sight again, singing out their angry, impatient ditty, for ever the same. They prefer those places where the furze is very thick, high, and difficult to get in."

The period of incubation commences early in the spring, each brood (of which there are always two, sometimes three, in the course of the season) consisting of four or five eggs. When first fledged the nestlings are unable to fly, and run over the ground exactly after the fashion of young mice. Whilst the little family is in this helpless condition, the parents are constantly in a state of great excitement and anxiety; their cry of admonition or warning is then to be heard incessantly; even when the young are sufficiently advanced to perch upon the branches, the same cautious watchfulness against approaching danger is maintained, and we have often amused ourselves by observing the precipitation with which the whole group of little Blackheads disappear as the obedient nestlings hurry to some safe shelter within the bush or tree, at the first signal from their vigilant parents. Such of

these birds as inhabit mountain ranges do not migrate ; in Spain they live at an altitude of 3,000 feet above the sea, and even when the snow begins to fall they merely come into the valleys below, and never wander to any great distance from their native haunts.

The TREE WARBLERS (*Phylloscopi*) constitute a family whose members are met with throughout the world. With the exception of one group, all are small, slender, delicately-shaped birds, with comparatively long wings, in which the third, fourth, and fifth quills usually exceed the rest in length. The tail is of moderate size, either quite straight or slightly incised at the extremity, and these tarsi are of medium height. The beak is awl-shaped, slender, rather flat at its base, and in some instances somewhat broader than it is high. The plumage is soft, and very uniform in colour ; it is usually of a pale green or brown on the back, and yellowish on the under side. All the species with which we are acquainted principally frequent the summits of trees, but come down occasionally to seek their insect food upon the rushes, or in the fields of corn ; they seldom consume berries, unless compelled to do so by hunger. All are active and restless, and display great agility, both among the branches and when running over the surface of the ground ; their powers of flight are also good, their voice always agreeable, and their senses well and sometimes highly developed. Such as inhabit Southern Europe, Asia, and Africa do not migrate, whilst those in milder latitudes leave their native lands late in the autumn, and return to them again in the early spring. These latter species generally breed twice during the summer, and lay from four to seven delicate white or pale rose-red eggs, marked with dark spots. The nests of all are constructed with the utmost care.

THE FIELD TREE WARBLER, OR WILLOW WREN.

The FIELD TREE WARBLER, OR WILLOW WREN (*Phyllopneuste Trochilus*), is a slenderly-formed bird with long wings, in which the third and fourth quill exceeds the rest in length. The tail is of moderate size, and slightly incised at its extremity ; the beak is delicate, broad at its base, and compressed at its tip. The lax plumage is of an olive green upon the upper parts of the body, and white on the under side, the breast being tinged with greyish yellow ; a yellowish-white stripe passes over the eyes, and the cheek stripes are deep grey ; the quills and tail-feathers are grey, edged with green, and the lower wing-covers light yellow ; the eye is brown ; the beak and legs grey. After the moulting season the under side becomes a pale yellow. This species is four inches and eleven lines long, and seven inches four lines broad ; both wing and tail measure about two inches. The sexes are alike in colour ; the young are greyish green above and yellowish-white on the throat ; the rest of the under side is white, tinted with yellow.

The Field Tree Warblers inhabit the whole continent of Europe, a large portion of Northern Africa, and some parts of North America. During their migrations they also occasionally visit India and Northern Africa. For the most part, however, such as quit Northern and Central Europe for the winter do not wander farther than its more southern countries. These birds alike frequent highlands and lowlands, and usually pass the summer months in disporting themselves about the leafy summits of lofty trees. In autumn, on the contrary, they come down into the brushwood and beds of reeds or rushes, or, in Southern Europe, alight in the fields of maize in quest of food ; dense forests they appear almost entirely to avoid. The song of this species is pleasing and flute-like ; its chief beauty, however, consists in the delicacy of intonation and rapid swelling and sinking of sound in which the male indulges, as he sits with drooping wing, inflated throat, and raised crest, upon a projecting branch, or flutters rapidly from bough to bough, in order to attract the attention of his intended mate ; at such times the female also utters a faint twittering kind of song. Like the Tree Warblers, these birds are particularly active among the foliage ; they do not creep in the quiet mouse-like manner

above described, but flutter about with a constant brisk agitation of the tail that cannot fail to betray their presence to an observant eye. While perched the body is usually held erect, but is kept somewhat bowed down as the bird hops upon the ground; this latter mode of progression is accomplished with some difficulty, each long hop, or rather leap, being followed by a succession of rapid gesticulations with the head before another effort is made. Their flight is capable of being long sustained, but is somewhat inelegant, and appears unsteady, as it is usually undulating and carried on by a series of very irregular efforts. The same restless activity is also observable in the conduct of these birds towards all their feathered companions; the slightest injury or annoyance is resented with much fury, and even the sportive exercises in which they frequently indulge usually terminate with a series of violent flappings and peckings given on either side, rather in downright earnest than in play. The



THE FIELD TREE WARBLER, OR WILLOW WREN (*Phyllopneuste Trochilus*).

nest is carefully concealed in a hollow in the ground or in the trunk of some tree, and built entirely by the female, who commences her operations by hacking at the hole or aperture till it is of the requisite depth. The utmost caution is displayed by the anxious mother to prevent the discovery of her future abode. For this reason she seldom works except during the early morning, and at other times never remains near the scene of her operations. The nest itself is cone-shaped, with thick walls, in one side of which a hole is left for entrance; dry leaves, stalks, moss, and grass are employed for the exterior, while the interior is snugly lined with feathers, those of partridges being usually preferred. From five to seven eggs form a brood; these are laid about May, and are oval in shape, smooth, glossy, and white, more or less spotted with light red. During the period of incubation the female displays much anxiety for the safety of her eggs, and even when alarmed will not leave them until she is forcibly removed. At mid-day her mate takes his place on the nest for an hour or two, but with this exception gives her no assistance; both parents, however, combine to rear and protect the nestlings, and endeavour to attract the attention of any intruder on their privacy

and divert it to themselves, by hurrying to a distance and uttering cries of distress. The young are fledged by the end of May, and a second brood is produced in June.

The LEAF WRENS (*Reguloides*) constitute a group inhabiting Southern Asia and the provinces of the Himalaya. In these birds the beak is comparatively shorter than that of the true Tree-Warblers. The wings are long and more pointed, and the legs shorter and weaker. All such species as inhabit India frequent mountainous districts.

THE LEAF WREN.

The LEAF WREN (*Reguloides Proregulus*), a member of the above group, that wanders from its native lands and appears in Europe, is greyish green on the upper portion of the body, and yellowish white on the under side; the rump is bright green; a yellowish-green line passes over the top of the head; and a reddish-yellow streak over the eye; the wings are also decorated with two whitish-yellow stripes. The eye is dark brown; the beak blackish brown above, and of a yellowish shade beneath; the foot is pale brown. The body is four inches long and six and a quarter broad; the wing measures two inches and the tail an inch and a half. This bird is a native of Central Asia, and is commonly met with in India and China during the winter; it has also been seen repeatedly in Southern Europe, and more rarely in the central countries of our continent. The nest of this species is spherical, and is constructed of fibres of various kinds woven neatly together with spiders' webs, and fastened firmly upon a branch at a considerable height from the ground. This elegant little abode is entered by two holes, the one at the side and the other in front; the latter, which is used most frequently, is protected by a projecting cover.

The GARDEN WARBLERS (*Hypolais*), by far the most attractive group of this numerous race, resemble their congeners in little except the colour of their plumage, and are readily distinguishable from them by the comparative compactness of their body, length of wing (in which the third and fourth quill are longer than the rest), and the thickness of their tarsus. The beak is large, broad, and powerful, compressed at its margin; and the tail is incised at its extremity. The habits and song of the Garden Warblers differ no less remarkably from those of other members of their family; their nests are open above, and are built upon trees, instead of upon the ground; even the eggs do not resemble those laid by other Warblers.

THE MELODIOUS WILLOW WREN.

The MELODIOUS WILLOW WREN (*Hypolais hortensis* or *Hypolais salicaria*), one of the five species of this group known in Europe, is greenish grey on the upper portions of the body, and light sulphur yellow beneath; the quills are pale blackish brown, edged with green on the outer web; the tail-feathers are lighter than the quills, and are bordered on the exterior web with dirty white; the eye is dark brown, the beak greyish brown, and reddish yellow at the base of the lower mandible; the foot is light blue. The length of the body is five inches and a half, the breadth nine inches and a half; the wing measures three inches and one-third, and the tail two inches. Central Europe must be regarded as the actual home of this pretty bird, but it is also met with in the northern part of the Continent as far as Scandinavia; it is but rarely seen in the south, where it is replaced by very similar species. Its autumnal migrations extend as far as Africa, and are commenced unusually early in the season, as this bird is particularly delicate and quite unable to endure the vicissitudes of climate so prevalent on our continent at the close of the year; nor does it venture to return until the spring is far advanced, and the trees are completely covered with their leaves. As their name implies, the

Garden Warblers almost invariably resort to cultivated districts, and prefer orchards, hedges, and gardens. When compelled to occupy the latter situations they generally frequent such trees as skirt the denser parts of the thicket, into whose recesses they rarely venture to penetrate, and are never met with in forests of fir or pine, or in mountain regions. In the localities favoured by their presence a certain limited district is selected, and to this the birds regularly return, season after season, defending their little territory from all intrusion with the utmost courage and obstinacy. In an instance that came under our own notice a pertinacious individual occupied the same domain for seven successive years. The voice of this species varies considerably in quality, but is never remarkable for sweetness; indeed, its only charm may be said to consist in the spirit and animation with which the singer pours out his notes, as he flutters about the highest trees, or perches, with body erect and raised crest, upon a projecting branch. When upon the ground the Melodious Willow Wren hops with difficulty, and usually with the head and neck thrown forward; in the air, on the contrary, it moves with rapidity and lightness. Insects of all kinds constitute its principal means of subsistence, but it also devours fruit, and does considerable damage in the cherry orchards. It occasionally destroys bees, and in an instance that came under our own notice the offending bird actually beat against the hives in order to compel its unconscious victims to come out. If undisturbed the Melodious Willow Wren breeds but once in the year, usually at the end of May or beginning of June; the eggs, from four to six in number, are rose-red or reddish grey, veined and spotted with black or reddish brown. The very beautiful purse-shaped nest is firmly built with grass, leaves, or any vegetable fibres, intermixed with spiders' webs, paper, and similar materials; the interior is lined with feathers and horsehair. The parents brood alternately, and the young are hatched within thirteen days; the nestlings are reared upon insects, and protected most carefully from danger by the wily stratagems above alluded to.

THE CHIFF-CHAFF.

The CHIFF-CHAFF (*Hippolais* or *Sylvia rufa*) is four inches and three-quarters long and seven broad; the bill is brownish black, inclining to yellow at the edges; the mouth of a pale saffron-yellow tint. The plumage below is pale lemon yellow; the belly mixed with silvery white, and the vent and under tail-covers inclining to deep straw yellow; the quill and tail-feathers are dusky, edged with yellow, except the exterior tail-feather on each side, which is plain. The female resembles her mate.

This bird visits England about the end of March. It makes its nest upon the ground, constructing it externally of dry leaves and coarse grass, with a lining of feathers. The eggs are six in number, white, and speckled at the larger end with purplish red, and an occasional single speck on the sides. Its double note, which is four or five times repeated, resembles the words "Chip-Chop," and hence its name of Chiff-Chaff. It is said to feed principally on the larvæ of the different species of *Tortrix* that are rolled up in the unfolding buds of various trees, rendering good service in devouring those insects that would otherwise destroy a great part of the fruit. If the weather is fine and mild, these birds may be seen among the most forward trees in orchards, flying from branch to branch and from tree to tree, chasing each other, and catching the gnats and small flies that come in their way. In the summer they feed on the aphides which infest trees and plants, and they are also very partial to small caterpillars, flies, and moths.

Mr. Sweet says the Chiff-Chaff is easily taken in a trap, and soon becomes tame in confinement; one that he caught was so familiar as to take a fly from his fingers; it also learned to drink milk out of a tea-spoon, of which it was so fond that it would fly after it all round the room, and perch on the hand that held it without showing the least symptom of fear.

THE ASHY GARDEN WARBLER.

The ASHY GARDEN WARBLER (*Hypolais cinerescens*) is entirely greyish green on the upper portion, and whitish green on the under side of the body. The eye is dark brown; the upper mandible horn colour, and the lower one yellowish grey; the legs horn grey. The length of the bird is five inches and seven lines, and the breadth about seven inches and ten lines; the wing measures two inches and seven lines, and the tail two inches and three lines; the female is about one line shorter, and from two to four lines narrower than her mate. This species inhabits Southern Europe, and is especially numerous in the highly cultivated districts of Spain; there, as elsewhere, it frequents vineyards, olive plantations, and fruit gardens, and ventures freely into the immediate vicinity of the

THE CHIFF-CHAFF (*Hippolais rufa*).

towns and villages; it appears entirely to avoid mountain ranges and rocky localities. Unlike the Willow Wren, the Ashy Garden Warbler is socially disposed towards those of its own race, and it is not uncommon to see the pairs not only living close to each other in the utmost harmony, but building upon the same tree. Such as we have observed seemed entirely without fear of men, for we have frequently known them to make their nests close to crowded thoroughfares, in small gardens, and, in one instance, in close vicinity to a public summer-house in Valencia, that was usually illuminated with lanterns until after midnight. The movements of these birds are similar to those of the species last described, but their song, although monotonous and without any particular beauty, somewhat resembles that of the Sedge Warblers. The breeding season commences about the first week in June, and continues until the end of July. The nest, which is built on a high tree and fastened firmly between two upright and parallel twigs, has a thick outer wall of grass, wool, stalks, and similar materials woven together very compactly; the interior is usually about two inches deep,

and one inch and a half broad. The eggs, from three to five in number, are of an oval shape, and have a pale grey or reddish shell, marked with dark brown or black. Both parents feed and tend their nestlings with great care and affection. This species is sometimes seen in North-western Africa.

The MARSH WARBLERS (*Calamodytæ*) are recognisable by their slender body, narrow, flat-browed head, short rounded wing, in which the second or third quill, or both, exceed the rest in length; moderate-sized tail, which is either rounded, graduated, or conical; and powerful foot, armed with strong toes and large hooked claws. The beak varies somewhat in different species. The



THE REED WARBLER (*Acrocephalus turdoides*).

plumage of all is compact, harsh in texture, and usually of a greyish-yellow or olive-green tint. In all the different species a light stripe passes over the region of the eye.

The Marsh Warblers inhabit all parts of our globe, but are particularly numerous in the Eastern Hemisphere. As their name indicates, they principally frequent marshy districts overgrown with reeds, rushes, or long grass, and only occasionally seek their food upon bushes; they entirely avoid mountain ranges, as the water that flows in the vicinity of the latter is too frequently agitated to suit their requirements. All lead a somewhat retired life within the limits of their favourite haunts, but are readily discovered by their very peculiar yet by no means unpleasing song, which is to be heard almost throughout the entire day. They fly but little, and with an unsteady fluttering movement, keeping the tail outspread, and always appear very unwilling to mount into the air. They hurry over the ground with wonderful rapidity, and slip in and out of tiny crevices with a celerity that fully equals that of a mouse. They also hop nimbly from point to point, and climb the perpendicular stems of reeds or long grass with the utmost facility. Insects of all kinds afford them their principal means

of subsistence, and they also occasionally eat berries; worms they utterly reject. Such as inhabit northern climates migrate at the approach of winter. The purse-like nest built by these birds is hung from a reed or twig close to the water's edge, and most artistically constructed; its bottom being heavy, the sides long, and the top turned inwards, so as to prevent the young from falling out, should the unsteady little structure be exposed to a violent wind. It is a remarkable fact that the Marsh Warblers appear to be fully aware that they may occasionally expect an unusual rise of water in the lake or stream near which they live, and always anticipate the danger that from this cause might accrue to the little family, by suspending the nest at a proportionate height from the ground. The eggs are hatched by both parents, and the young tended and fed long after they are fully fledged.

The REED WARBLERS (*Acrocephalus*) constitute a group possessing most of the characteristics that distinguish this family. In these birds the beak is almost straight, or very slightly curved at its extremity; the wings are of moderate size, the third and fourth quills exceeding the rest in length; the exterior tail-feathers are somewhat shortened, and the foot unusually powerful. The compact and unspotted plumage is usually olive green on the upper portion of the body, and reddish or yellowish white beneath.

THE TRUE REED WARBLER.

The TRUE REED WARBLER (*Acrocephalus turdoides*) is about eight inches long and eleven broad; the wing measures three inches and a half, and the tail four inches and a quarter. This species is yellowish grey on the mantle, and reddish white on the under side, shaded with grey upon the throat. The female is somewhat smaller and paler than her mate. The Reed Warblers inhabit Europe, from South Scandinavia to Greece and Spain; in the extreme south and in Northern Africa they are replaced by nearly allied species. Everywhere they frequent such marshy localities as are overgrown with reeds, and are never seen in mountainous regions or woodland districts, or even upon the trees that grow near their favourite haunts. The migratory season commences in September; but during their wanderings, which often extend as far as Central Africa, they pass direct from one piece of water to another, and never turn aside in their course to linger in any but marshy or well-watered places. Shortly after the return of these birds, at the end of April or beginning of May, their loud resonant voices are to be heard not only from sunrise to sunset, but frequently throughout the night. The song is a strange combination of a great variety of harsh quavering notes, more nearly resembling the croaking of the frogs whose domain they share than the notes of any of the feathered creation. While singing the males usually perch upon a reed or twig, with drooping wing, outspread tail, inflated throat, and open beak, and go through their noisy performance with an energetic desire to rival every bird around them; such is the evident satisfaction they exhibit at the result of their efforts, as to make the listener overlook the want of vocal talent, in his amusement at the conceit of the self-complacent songsters. The nests are commenced about June, and are built near together, suspended firmly from the reeds that overhang the surface of the pond or stream, some four or five being drawn firmly together to make a safe support.

Like other Marsh Warblers, they display wonderful instinct in the situation they select, and invariably build at such a height as is secure from any unusual rising of the water; indeed, it has been repeatedly observed that in certain years the nests of the Reed Warblers were constructed at an unusual distance from the ground, and this precaution has always been explained later in the season by the fall of extraordinary heavy rain, that would inevitably have swept away the little structures had they been placed in the situation ordinarily selected. The nest itself is very long in shape, with the

top turned inwards, to render the nestlings secure in a high wind. The walls are thick, formed of grass, stalks, fibres, and wool, lined with cobwebs, horsehair, and similar materials. The eggs, four or five in number, are of a bluish or greenish-white tint, spotted and veined with dark brown and grey; the young are hatched in about a fortnight, should the parent be undisturbed, and are tended with great affection, even long after they are fully fledged. The Reed Warblers, as we learn from Dr. Bennett, are commonly met with in Australia. "One species" (*Acrocephalus Australis*), he tells us, "is very numerous about the sedgy localities of the Nepean river; and although it has been denied that any of the Australian birds are endowed with a musical voice, this bird has a very loud, pleasing song, enlivening the places it frequents. It is a migratory species, arriving in the spring season—*i.e.*, about September—and taking its departure as winter commences. It builds its nest, suspended among the reeds, in a similar manner to its congeners in Europe; it is composed of the thin epidermis of reeds interwoven with dried rushes. The sexes are alike. I did not see the eggs in the nests, but they are stated to be four in number, of a greyish-white colour, thickly marked all over with irregular blotches and markings of yellowish brown, umber brown, and bluish grey."

The large Reed Warbler of India (*Acrocephalus brunescens*) is, according to Jerdon, very similar to the European species, but differs in being something smaller in the relative size of the primaries, the greater length of the wing, and the greater intensity of its colour.

The larger Reed Warbler is found in most parts of India in the cold weather, for it is only a winter visitant. It extends into Assam, Aracan, and China, in some parts of which latter country it probably breeds. It frequents high reeds and grasses, high grain fields and gardens, where it hunts among the rows of peas, beans, and other vegetables. It clings strongly to the stalks of grain, and makes its way adroitly through thick grass or bushes, concealing itself when observed, and being with difficulty driven out. It feeds on small grasshoppers, ants, and other insects. "I have," continues our author, "heard it occasionally utter a harsh, clucking kind of note."

The SEDGE WARBLERS (*Calamodus*) are distinguished from the birds above described by their inferior size, and by the comparative shortness of their wings, in which the third quill is the longest; the tail, moreover, is very decidedly rounded, and their plumage spotted.

THE SEDGE WARBLER.

The SEDGE WARBLER (*Calamodus phragmitis*) is about five inches and a half long, and eight and a quarter broad; the wing measures two and a quarter, and the tail two inches. The plumage on the upper portion of the body is yellowish brown, spotted with dark brown, the under side a reddish white; a yellow streak passes over the eyes, and the posterior quills have light edges. The eye is brown, the beak brownish black, except at its margins, and the base of the under mandible, which are of a light yellowish red; the foot is dirty yellow. In the young, the mantle is reddish grey and the under side reddish yellow, spotted on the region of the crop with dark grey or brown. This species inhabits all the European countries that extend from 68° north latitude as far as Greece and Spain, usually arriving in April and leaving again in October, when it wanders as far as Northern Africa. In the latter continent it is often seen upon the plains covered with *halfa* grass, but in Europe it always frequents such marshy districts as are overgrown with rushes, sedge, grass, and small-leaved water plants. Its flight is very unsteady, but in other respects its movements are unusually nimble and agile; the song is pleasing, flute-like, and very varied. Except during the period of incubation, which commences in June, these birds usually lead a very retired life amid the beds of grass or rushes, but at the latter season they emerge, and take up their quarters on the surrounding trees and bushes, where they engage in a series of vocal concerts, each inspired with

the hope of outdoing its numerous rivals in the favour of some attractive female. Should any one of the feathered competitors venture to intrude upon the same branch as the energetic singer he is at once driven with much violence from the spot, to prevent a repetition of the offence. During the whole time that the female broods the male bird exhibits the same anxious desire to please her, and is often heard gaily carolling from dawn of day till far into the night. "The song," says Mudie, "is hurried but varied, not so much in the single stave as in its having several of them, which would lead one to imagine that there were several birds. It sings in the throat, and gives a sort of guttural twist



THE SEDGE WARBLER (*Calomodrus phragmitis*).

to all it utters." At times, in his excitement, he rises rapidly into the air, and, after hovering for a few moments with wings raised high above the body, slowly descends or drops, like a stone, to the spot whence he ascended. At this period of the year, not only the manner of flight, but the whole nature of the male bird seems changed, and he exhibits a fearlessness that contrasts strangely with his usual cautious and timid demeanour. Like other members of this family, the Sedge Warbler subsists principally upon insects, and occasionally devours various kinds of berries. The nest, which is placed amongst clumps of sedge, grass, or rushes, on marshy ground, at not more than a foot and a half from its surface, is firmly suspended to the surrounding stalks, and formed of hay, stubble, roots, and green moss, woven thickly and firmly together, and lined with horsehair, feathers, and delicate blades of grass. The eggs, from four to six in number, are of a dirty white, more or less shaded with

green, and spotted and streaked or marbled with brownish grey. Both parents assist in the labour of incubation, and hatch the young in about thirteen days, if undisturbed ; but, if molested, they frequently desert the nest, and at once commence preparations for another brood. At first, the female alone appears to feel solicitude or care for her eggs, her mate usually amusing himself until they are hatched, by singing and fluttering about throughout the entire day, and exhibiting no distress, even should both mother and brood be removed or destroyed. No sooner, however, have the nestlings left the shell than his interest is awakened, and he tends and protects them with anxious care. The young quit the nest as soon as they are fledged, and run like mice about the surrounding stalks, until they are strong enough to fly.

“The Sedge Warbler,” says Mr. Yarrell, “is a summer visitor to this country, arriving in April and leaving again in September, but on one occasion a single specimen was observed near High Wycombe, in Buckinghamshire, in winter. Immediately on its arrival it takes to thick cover by the water-side, and is much more frequently heard than seen ; though it may occasionally be observed flitting on the uppermost twigs of the willows it inhabits, giving rapid utterance to a succession of notes as it flies from one branch to another. White, of Selborne, appears to have first made Pennant acquainted with this species, and, with his usual acuteness, detailed the habits of the bird, particularly remarking its power of imitating the notes of other birds and its singing at night. The observations of others in various localities have confirmed the accuracy of his remarks, and the Sedge Warbler, in the situations it frequents, may be heard throughout the day, and frequently during a summer night, imitating the notes of various birds in a somewhat confused and hurried manner ; and should he desist for a few minutes’ rest, it is only necessary to throw a stone or clod of dirt among the bushes—he will immediately commence a series of repetitions, but seldom quits his covered retreat.” “The marshy banks of the Thames, on either side of the river, where beds of reeds or willows abound,” continues the same accurate writer, “are well stocked with this bird ; although, from the wet and muddy nature of the ground, they are not very easy to get at. In the southern and western counties it occurs in Hampshire, Dorsetshire, Devonshire, Cornwall, and in Wales ; and is a summer visitor to the north of Ireland. It occurs also in the marshes of Essex, in Suffolk, Norfolk, Lincolnshire, Yorkshire, Northumberland, and Lancashire, and was traced by Mr. Selby, in Sutherlandshire, to the northern extremity of the island ; it was found pretty generally distributed along the margins of the lochs, particularly where low birchen coppice and reedy grass abounded. The well-known babbling notes of this wakeful little songster proclaimed its presence in many unexpected situations.”

The GRASSHOPPER WARBLERS (*Locustella*) constitute a group presenting the following characteristics :—Their slender body is much deeper than it is broad ; the awl-shaped beak, wide at its base ; the foot of moderate height, and toes long ; the wings, in which the second and third quills exceed the rest in length, are short and rounded ; the tail is broad, of medium size, graduated at its extremity, and the feathers are of unusual length. The rest of the plumage is soft and delicate, usually of a brownish green above, with dark spots on the back and upper part of the breast. The voice of these birds is very remarkable, the sounds they produce being very similar to the chirping notes of the cricket or grasshopper. All frequent localities overgrown with grass or plants, and differ as to their habits in many essential particulars from other members of the family.

THE GRASSHOPPER WARBLER.

The GRASSHOPPER WARBLER (*Locustella certhiola* or *L. Rayii*) is from four inches and three-quarters to five inches and a half long, and from seven and a half to eight broad ; the wing measures two inches and a half, and the tail from one inch and five-sixths to two inches. Upon the upper

part of the body the plumage is olive grey or yellowish brown, decorated with oval brownish-black spots; the throat is white, the upper breast reddish yellow spotted with dark grey, the belly whitish or yellowish white, somewhat deeper in hue at its sides; the lower tail-covers white, with light brown spots upon the shafts; the quills are blackish brown, with narrow yellowish-grey edges, which increase in breadth towards the roots; the tail-feathers are of a deep greenish brown, striped with a darker shade and surrounded by a light border; the eye is greyish brown, the beak horn grey, and the foot light red. After the moulting season the under side is yellower than before. In the young the breast is unspotted.

The Grasshopper Warbler is found throughout Central Europe and Central Asia. In England it arrives about April and departs in September, and during the course of its migrations wanders as far as China. Unlike most of its congeners, this bird does not confine itself to any particular situation, but occupies fields and woodland districts as frequently as marshy tracts or brushwood. Everywhere, however, it seeks the shelter of the densest foliage of the bushes, or creeps about close to the ground beneath the overspreading leaves of plants growing by the water-side. In both these situations it displays the utmost activity in evading pursuit; if alarmed, the tail is brandished aloft, and the drooping wings agitated from time to time; upon the ground it runs with ease, keeping the neck outstretched forward, and the hinder portion of the body constantly in motion. Its flight is rapid, light, and very irregular.

"Nothing can be more amusing," says Gilbert White, "than the whisper of this little bird, which seems close by, though at a hundred yards' distance; and when close to your ear is scarce louder than when a great way off. Had I not been acquainted with insects, and known that the grasshopper kind is not yet hatched, I should have hardly believed but that it had been a *Locusta* whispering in the bushes. The country people laugh at you when you tell them that it is the note of a bird. It is a most artful creature, skulking in the thickest part of a bush, and will sing at a yard's distance, provided it be concealed. I was obliged to get a person to go on the other side of a hedge where it haunted, and then it would run creeping like a mouse before us for a hundred yards together, through the bottom of the thorns, yet it would not come into fair sight; but in a morning early, and when undisturbed, it sings on the top of a twig, gaping and shivering with its wings."

The food of this species varies somewhat with the situation it occupies, but is always of the same description as that employed by the other members of the family. The nest, which is most carefully concealed in a great diversity of situations, is neatly formed of green moss, or similar materials, lined with fibres and horsehair. The eggs, from three to six in number, are of a dull white or pale rose red, marked with reddish or brownish spots, strewn most thickly over the broad end, and forming occasionally a slight wreath. It is probable that both parents assist in the process of incubation. In some seasons the Grasshopper Warbler produces two broods, the first at the beginning of May and the second at the end of June.

The BUSH WARBLERS (*Drymoice*) constitute a very extensive group, closely allied to those above described. They are of small size, with short, rounded wings, comparatively slender and more or less graduated tail, and moderately large and powerful feet. The beak is of medium length, compressed at its sides, slightly curved along the culmen; the plumage is usually of sombre appearance. Various members of this group inhabit all parts of the world, and alike frequent low brushwood, shrubs, reeds, long grass, or beds of rushes. In all these situations they display extraordinary agility, but their powers of flight are, without exception, feeble and clumsy. In disposition they are sprightly, and very noisy, although almost invariably without vocal talent. Beetles, worms,

snails, and grubs constitute their principal means of support. Their nests are always remarkable for their great beauty, some species exhibiting great artistic skill in their manner of *weaving* their materials together, while the most famous members of the group, the wonderful "Tailor Birds," literally *sew* leaves to each other, and employ them to enclose the actual nest, or bed for the young.

THE PINC-PINC.

The PINC-PINC (*Cisticola schœnida*) is very recognisable by its short, delicate, and slightly curved beak, long tarsi, large toes, short tail, and rounded wing, in which the fourth quill exceeds the rest in length. The plumage of the adult is yellowish brown, the head being spotted with three blackish and two light yellow streaks. The nape and rump are brownish and unspotted; the throat and belly are pure white; the breast, side, and lower tail-covers reddish yellow; the quills are greyish black, edged on the outer web with reddish yellow. The centre tail-feathers are reddish brown, the rest greyish brown, bordered with white at the end, and decorated with a heart-shaped black spot. The eye is brownish grey, the beak horn colour, and the foot reddish. The young are only distinguishable from the adults by the lighter colour of the under side. This species is four inches and a quarter long, and two and a quarter broad; the wing measures one inch and three-quarters, and the tail an inch and a half. The female is a quarter of an inch shorter and half an inch narrower than her mate. The Pinc-Pinc, as it is called by the Algerines, from a supposed resemblance of those syllables to its note, is numerously met with in Central and Southern Spain, Southern Italy, Greece, Sardinia, Algiers, and India.

"This bird," says Jerdon, "is now considered identical with the European one, and is also spread over the greater part of Africa. It is found in every part of India, frequenting long grass, corn and rice fields. It makes its way adroitly through the grass or corn, and often descends to the ground to pick up insects; but I do not think that it habitually runs along, as the name given by Franklin would imply, but it rather makes its way through the grass or reeds, partly hopping and partly flying. When put up it takes a short jerking flight for a few yards, and then drops down into the grass again. It feeds on ants, larvæ of grasshoppers, and various other small insects. As Blyth remarks, 'It may commonly be observed to rise a little way into the air, as is the habit of so many birds that inhabit similar situations, repeating at intervals a single note, "Jik! jik!"' During the breeding season the male bird may be seen seated on a tall blade of grass, pouring forth a feeble little song. The nest is made of delicate vegetable down, woven into the stems of a thick clump of grass, and forming a compact and very beautiful fabric, with a small entrance near the top, and the eggs are four or five in number, translucent white, with reddish spots. It has been noticed that whilst the hen is laying the male bird builds the nest higher."

According to Hausmann it is quite stationary in its habits, and our own observations corroborate this statement. In Spain it occupies low-lying places, and in Sardinia, we learn from the above-mentioned authority that it frequents such flat parts of the sea-coast as are marshy and overgrown with grass, but also frequently breeds and lives in fields of corn. In North-western Africa it seeks meadows and pasture-land, and in India dwells on any spot covered with either long grass, corn, or rice. During the breeding season the male is extremely active, and may be constantly seen flying restlessly about, uttering its loud note, and fluttering boldly round and about any intruder on its privacy; at other times it is somewhat timid. All kinds of caterpillars, dipterous insects, and small snails constitute the principal food of the Pinc-Pinc; these it gathers from the leaves or seeks upon the ground, casting forth the harder portions after the softer parts are digested. The nest, which we have repeatedly found among long grass, reeds, and rushes, about half a foot from the ground, is thus described by Le Vaillant:—"It is," he says, "usually placed among prickly bushes, but

sometimes on the extreme branches of trees. It is commonly very large, some apparently larger than others, but this difference of size is only external; in the interior they are all of nearly the same dimensions, namely, between three and four inches in diameter, while the circumference is often more than a foot. As the nest is composed of the down of plants, it is of snowy whiteness or of a brownish hue, according to the quality of the down produced by the surrounding shrubs. On the outside it appears to be constructed in an irregular and clumsy manner, in conformity with the curvatures of the branches on which it is so firmly attached (part of them passing through its texture), that it is impossible to move it without leaving one-half behind. If, however, externally, the nest has the appearance of being badly constructed, we shall be all the more surprised to find that so small a bird, without other instrument than its bill, wings, and tail, should have felted vegetable down in such a manner as to render it a fabric as united and firm as cloth of good quality. The nest itself is of a rounded shape, with a narrow neck at its upper part, through which the bird glides into the interior. At the base of this tubular neck there is a niche, or shelf-like appendage, like a small nest resting against the large one, which serves as a momentary resting-place, by means of which the Pinc-Pinc may pass more easily into the nest, a feat which, without such a contrivance, it might have some difficulty in accomplishing, as it could not move through so small an entrance on the wing, and the walls of the tube are so slightly formed, that the bird would injure them were it constantly to rest upon them. This little appendage is as firmly felted as the interior. Sometimes there are two or three of these perches. It has until lately been supposed that the female alone undertook the whole labour of building this strange and beautiful structure, but we learn from Tristram, whose statement is confirmed by Jerdon, that the male does considerably more than half of the work. "I had the good luck," says Tristram, "to find a nest that was just commenced, and was able daily to observe the whole process. The first egg was laid before the outer wall was more than an inch high, the male continuing to labour without intermission, until by the time the nestlings were hatched the fabric was quite firm, and full three inches in height. The eggs vary considerably in appearance; those we found in Spain were of a uniform light blue, others again are bluish green, sparsely marked with small or large brown, reddish, or black spots, or pure white spotted with bright red. The young are tended by both parents with much affection; the male especially appears entirely to lay aside his usual timidity, and will frequently follow an intruder for some distance, uttering low cries, as if to scare him from the spot."

The proceedings of a family of young birds are most entertaining to behold, as they climb and flutter about the grass or corn, while the busy father and mother seek food for their hungry progeny. No sooner has one of the parents succeeded in capturing an insect than the whole flock hurry with tails upraised to receive it, each scrambling with earnest endeavour to be first, and obtain the coveted morsel. Should danger be at hand, the mother disappears with her young to some safe retreat, while the father rises into the air, and flies about in his usual manner. Savi tells us that the Pinc-Pinc breeds thrice in the year—in April, June, and August. We ourselves have found nests in May, June, or July.

The TAILOR BIRDS (*Orthotomus*) constitute a remarkable group of Bush Warblers, and are at once recognisable by their elongated body, much rounded wing, in which the fifth and sixth quills are the longest; their short abruptly rounded or graduated tail, composed of very narrow feathers; and by their powerful feet with high tarsi and short toes; the beak is long, straight, broad at the base, and pointed at the tip, and in every respect admirably adapted for the sewing operations it has to perform; the base of the bill is surrounded by a few delicate bristles; the plumage is smooth and brightly coloured, usually green on the back and rust-red on the head.

THE LONG-TAILED TAILOR BIRD.

The LONG-TAILED TAILOR BIRD (*Orthotomus longicauda*) is of a yellowish olive-green on the mantle, red on the crown of the head, and greyish red upon the nape; the under surface is white with faint blackish spots upon the sides of the breast. The quills are brown edged with green, the tail-feathers brown shaded with green, those at the exterior are tipped with white. In the male the two

THE LONG-TAILED TAILOR BIRD (*Orthotomus longicauda*).

centre tail-feathers are considerably prolonged. The length of this species is six inches and a half, the wing measures two, and the tail three inches and a half; the female is not more than five inches long, and her tail does not exceed two inches. The Tailor Birds are found throughout all parts of India, from the Himalayas to Cape Comorin, also in Ceylon, Burmah, and the neighbouring countries, frequenting such localities as are not entirely destitute of trees or bushes. In these situations they usually live in pairs or small families, and pass their days in hopping nimbly from twig to twig in search of insects, caterpillars, and larvæ, upon which they subsist. When moving over the ground or eating they keep the tail erect, and elevate the feathers upon the head. The manner in which

they construct their strange and beautiful nest is truly wonderful. Having chosen a leaf of adequate dimensions, the ingenious sempstress draws the edges together by means of her bill and feet, then, piercing holes through the approximated edges, she secures them in their place by means of cotton threads, the ends of which she ties into small bunches and thus fastens them, so as to prevent them from slipping through. Sometimes the Tailor Bird, having picked up a fallen leaf, fastens it to one still growing on the tree by sewing the two together in the manner above described, and thus prepares a pensile cradle in which the nest is constructed. The interior is lined with a thick layer of cotton, flax, and other vegetable fibres, mixed with a little hair, and on this comfortable bed the eggs are laid and the young live secure from the attacks of monkeys or snakes. The brood consists of three or four eggs, which are white, spotted with brownish red at the broad end.

"This bird is most common," says Jerdon, "in well-wooded districts, frequenting gardens, hedgerows, orchards, low jungle, and even now and then the more open parts of high tree jungles. It is usually seen in pairs, at times in small flocks, incessantly hopping about the branches of trees, shrubs, pea rows, and the like, with a loud, reiterated call, or picking various insects, chiefly ants, cicadellæ, and various small larvæ, off the bark and leaves, and not unfrequently seeking them on the ground. It has the habit of raising its tail whilst feeding, and hopping about, and at times, especially when calling, it raises the feathers, and displays the concealed black stripes on its neck. The ordinary note of the Tailor Bird is, 'To-wee! to-wee! to-wee!' or, as it is syllabised by Layard, 'Pretty! pretty! pretty!' When alarmed or angry it has a different call. It is a familiar bird, venturing close to houses, but, when aware that it is watched, it becomes wary and shy.

"The Tailor Bird makes its nest with cotton wool and other soft materials, sometimes also lining it with hair, and draws together one leaf or more, generally two leaves, on each side of the nest, and stitches them together with cotton, either woven by itself, or cotton thread picked up, and, after passing the thread through the leaf, it makes a knot at the end to fix it. I have seen a Tailor Bird at Saugor watch till the *dirzee* (native tailor) had left the verandah where he had been working, fly in, seize some pieces of thread that were lying about, and go off in triumph with them. This was repeated in my presence several days running. I have known many different trees selected to build in; in gardens very often a guava-tree. The nest is generally built at from two to four feet above the ground. The eggs are two, three, or four in number, and, in every case I have seen, were white, spotted with reddish brown, and chiefly at the large end."

Colonel Sykes tells us that the eggs are crimson, but he has probably mistaken the nest and eggs of *Prinia socialis*, which last are sometimes of a uniform brick-red. Hodgson suspects that there are two species confounded under one name, as he has on several occasions got unspotted *blue* eggs from a Tailor Bird's nest. These were probably those of *Prinia gracilis*, the eggs of which are blue. Layard describes one nest "made entirely of cocoa-nut fibre, encompassed by a dozen leaves of oleander, drawn and stitched together. I cannot call to recollection ever having seen a nest made with more than two leaves."

THE EMU WREN.

The EMU WREN (*Stipiturus malachurus*), one of the most remarkable birds found in Australia, is distinguished by the very unusual formation of the web of the six feathers that compose the tail, a peculiarity most observable in the male. The upper part of the body is brown, striped with black; the top of the head rust-red; the chin and throat pale blueish grey; the rest of the under side is bright red, the quills are dark brown edged with reddish brown, and the tail-feathers dark brown; the eye is reddish brown, and the beak and feet brown. In the female the top of the head is streaked with black, and the region of the throat red instead of blue.

The genus *Stipiturus*, according to Mr. Gould, is a form entirely confined to Australia. These birds frequent extensive grass-beds, particularly those which occur in humid situations. They run quickly over the ground, and carry the tail erect, like the *Maluri*. Some slight variation occurs in specimens from Tasmania and Southern and Western Australia, but, probably, they are all referable to one species.

"The delicate little Emu Wren," says Dr. Bennett, "although formerly seen in great numbers in the vicinity of Sydney, is now very rare. It was also named the Cassowary Bird by the early colonists, from the peculiar feathers in the tail, and was first described in 1798, in the *Linnean Transactions*. It is an active little creature, running rapidly among the grass, and, from the shortness of its wings, appears ill adapted for flight. Some years since it congregated in great numbers in the Sydney Domain, near the Botanic Garden, but for some time not one has been seen in that locality. This bird rarely perches on a bush at an elevation of more than three or four feet from the ground; it is usually observed darting quickly over the long grass, and, by its activity, readily eludes pursuit."

"This curious little bird," says Mr. Gould, "has a wide distribution, since it inhabits the whole of the southern portion of Australia, from Moreton Bay on the east to Swan River on the west, including Tasmania. Among the places where it is most numerous in the latter country are the swampy grounds in the neighbourhood of Recherche Bay in D'Entrecasteaux Channel, the meadows at New Norfolk, Circular Head, and Flinder's Island in Bass Straits. On the continent of Australia, Botany Bay and, indeed, all portions of the country having a similar character are favoured with its presence.

"The Emu Wren is especially fond of low, marshy districts, covered with rank high grasses and rushes, where it conceals itself from view by keeping near the ground, and in the midst of the more dense parts of the grass-beds. Its extremely short round wings ill adapt it for flight, and this power is consequently seldom employed, the bird depending for progression upon its extraordinary capacity for running; in fact, when the grasses are wet from dew or rain, its wings are rendered perfectly unavailable. On the ground it is altogether as nimble and active; its creeping, mouse-like motions, and the extreme facility with which it turns and bounds over the surface, enabling it easily to elude pursuit, and amply compensating for the paucity of its powers of flight. The tail is carried in an erect position, and is even occasionally retroverted over the back.

"The nest, which is a small ball-shaped structure, with rather a large opening on one side, is composed of grasses lined with feathers, and artfully concealed in a tuft of grass or low shrub. One that I found in Recherche Bay contained three newly-hatched young; this being the only nest I ever met with, I am unable to give any description of its eggs from my own observation; but the want is supplied by the following account of this species from the pen of Mr. E. P. Ramsay, published in the *Ibis* for 1865:—

"I had for many days visited the swamps on Long Island, where these birds are very plentiful, in the hope of finding them breeding, but it was not till the 25th of September that I succeeded in discovering a nest, although I had watched them for hours together for several days. While walking along the edge of the swamp on that day a female flew from my feet out of an overhanging tuft of grass, growing only a few yards from the water's edge. Upon lifting up the leaves of the grass which had been beaten down by the wind, I found its nest carefully concealed near the roots, and containing three eggs. They were quite warm, and within a few days of being hatched, which may account for the bird being unwilling to leave the spot; for, upon my returning about five minutes afterwards, the female was perched upon the same tuft of grass, and within a few inches of whence I had taken the nest. The nest was of an oval form (but that part which might be termed the true nest was perfectly

round), placed upon its side; the mouth very large, taking up the whole of the under part of the front. It was very shallow, so much so that if tilted slightly the eggs would roll out, being almost on a level with the edge. It was outwardly composed of grass, and the young dry shoots of the reeds which are so common in all the swamps near the Hunter River, lined with fine grass, roots, and, finally, a very fine green moss. It was very loosely put together, and required to be moved very gently to prevent its falling to pieces.

“ ‘The eggs are six lines and a half long by four and a half broad, they are sprinkled all over with minute dots of a light reddish brown, particularly at the larger end, where they are blotched with the same colour. One of the three had no blotches, but was minutely freckled all over. The ground-colour is a delicate white, with a blush of pink before the egg is blown.



THE EMU WREN (*Stipiturus malachurus*).

“ ‘The only note of the bird, besides a slight chirp when flushed and separated, is a twitter, not unlike a faint attempt to imitate the *Malurus cyaneus*. While in the swamp, which at that time was nearly dry, I observed several separate flocks; of these some were hopping along the ground, picking up something here and there, others, whose appetites seemed appeased, were creeping along through the reeds, about a foot from the ground, but as the reeds thickened I soon lost sight of them. They seldom took wing except when disturbed, and not always then, seeming very averse to showing themselves. While watching them, I observed one now and then hop to the top of a tall reed, as if to get a glimpse at the world above. Upon coming suddenly upon a flock and following them, they keep to the reeds just in front of you, and never take wing unless hard driven, when they separate, and do not collect for some time.

“ ‘The male is readily distinguished from the female by the blue colouring of the throat, and by a somewhat greater development of the tail-feathers. The decomposed or loose structure of these

feathers, much resembling those of the Emu, has suggested the colonial name of the Emu Wren for this species, an appellation singularly appropriate, inasmuch as it at once indicates the kind of plumage with which the bird is clothed, and the Wren-like nature of its habits.’”

The WRENS (*Troglodyte*) are small, compactly-built birds, with short wings and tails. Their beak is small, or of medium size, thin, awl-shaped, compressed at its sides, and slightly curved at its culmen; the feet are weak, short-toed, and the tarsi of moderate height; the wings, in which the fourth or fifth quill is the longest, are short, rounded, and much arched; the tail very short, conical, or slightly rounded. The plumage is usually reddish brown, marked with black. These little birds are to be met with all over the world, but are especially numerous in Europe, Asia, and America;



THE COMMON WREN (*Troglodytes parvulus*).

everywhere they frequent the vicinity of trees or bushes, in whatever situation these are to be found, but most commonly prefer well-watered and cultivated districts. All the various species are restless, lively, and active; upon the ground, they hop with the utmost activity, and display a rapidity in creeping through the most tangled brushwood that is almost unrivalled. All are endowed with agreeable voices, and some American species sing very sweetly. The nests are generally of an oval shape, roofed above and furnished with a small entrance at the side; the materials employed vary considerably, according to the situations in which the nests are constructed, the places selected for building being sometimes curiously chosen. A Wren, as we are told by the Rev. J. G. Wood, made its nest in the body of a dead Hawk that was nailed to the side of a barn, and another in the interior of a pump, gaining access through the spout. As these birds testify little fear of man in South America, they are frequently provided with convenient receptacles for their nests, in order to induce them to build upon the roofs of the houses.

THE COMMON WREN.

The COMMON WREN (*Troglodytes parvulus*) is about four inches long, and from five inches and a half to six inches broad; the wing measures an inch and three-quarters and the tail about an inch and a half. Upon the upper portion of the body the plumage is reddish brown, streaked with pale black; the under side is paler, marked with undulating dark brown lines; a brown cheek-stripe passes across the eyes, and a narrow brownish white line above them. The centre feathers in the wing-covers are decorated with oval white patches, touched with black; the quills are deepish grey on the inner web, and on the outer alternately spotted or streaked with reddish yellow and black; the tail-feathers are reddish brown, lightest at the edges, and marked with undulating dark brown lines; the eye is brown; the beak and feet reddish grey. The female is paler than her mate, and the young have more spots on the under side, and fewer on the back, than the old birds. The Wren inhabits all parts of the continent of Europe, from Northern Scandinavia to the most southern confines of Spain and Greece; in the Faroë Islands it is replaced by a very similar but much larger species (*Troglodytes borealis*); and another but more spotted variety (*Troglodytes Naumanni*) is met with in some parts of Central Europe. In North-western Africa and Asia Minor it is also common, but is, we believe, never seen in other parts of Asia. Such as inhabit India are nearly allied but not identical species. Like most members of its family, the Common Wren is lively and social, constantly seeking the immediate vicinity of man. Its song consists of a great variety of clear piping notes, intermingled with numerous trills, and is poured out with an energy and power that appear really astonishing, if we consider the small dimensions of the little singer. Throughout almost the entire year this cheerful music is to be heard; no inclemency of weather appears to daunt the brisk but diminutive vocalist, who carols forth his joyful anticipations of the coming spring, even when the snow-covered ground renders it impossible for him to procure a sufficient supply of food, and cold and want have completely silenced all his feathered companions. Like those of other members of its family, the movements of this species in the trees and on the ground are extremely agile and lively, but its flight, even for a Wren, is weak and unsteady. So slight are its powers of endurance, that Naumann assures us that a man can readily run it down and capture it with the hand. Indeed, a curious practice, as we are told, "has prevailed from time immemorial in the south of Ireland, of hunting this harmless little bird on Christmas Day. The hedges are beaten with sticks, and when the unfortunate little creature is driven from its concealment, it is struck down with a second stick carried by each hunter. On St. Stephen's Day the dead birds are hung by the children on an ivy-bush decorated with bright ribbons, which they carry about with songs, and collect money to 'bury the Wren.' This cruel piece of folly is, we are happy to learn, now falling into disuse."

This pretty little bird lives principally upon insects and berries, and when these fall short, it often ventures fearlessly into houses and outbuildings, in the hope of obtaining a meal. The situation of the nest and the materials employed for building it vary considerably. Trinthammer mentions an instance in which one of these birds made its nest year by year in the hut of some charcoal-burners, following them season after season in all their wanderings; indeed, it is not uncommon for a pair to build many times, before they have satisfied their fastidious requirements; and, strange to say, a solitary male will often make several nests before it has selected a mate. Boenigk, who observed a Wren attentively from April to August, tells us that the male constructed four nests before it took a partner. After it had found a mate, both worked together at three different nests, each in succession being left uncompleted, until at last the female, despairing of obtaining a place wherein to deposit her eggs, deserted her capricious spouse, who consoled himself by constructing two more nests, which, like the rest, were never employed.

"It is remarkable," says Montague, "how the materials of the Wren's nest are generally adapted to the place: if built against the side of a hayrick, it is composed of hay; if against a tree covered with white moss, it is made of that material; and with green moss if against a tree covered with the same; thus instinct directs it for security." Mr. Jesse mentions that he possessed a nest "built amongst some litter thrown into a yard, which so nearly resembled the surrounding objects that it was only discovered by the birds flying out of it. Some of the straws that composed it were so thick that one wondered how so small a bird could have used them." A correspondent in the *Magazine of Natural History* says:—"In watching a pair of Wrens building their nest in an old road, I noticed that one confined itself entirely to the construction of the nest, which it never left for a moment, whilst the other was as incessantly passing and repassing with materials for the structure. These materials, however, this helper never once attempted to put into their places; they were always regularly delivered to the principal architect employed in constructing the building."

"I was not aware," says Mr. Weir, "it had been taken notice of by any naturalist that the European Wrens, or at least some of this species, take possession of their nests as places of repose during the severity of winter, until I perused a very interesting account of the habits of these little birds by Neville Wood, Esq., who says, 'Whether the nests in which one or two broods had been reared in the summer are tenanted every night throughout the winter by the old or the young birds is a question more curious than easy to determine, on account of the difficulty, almost impracticability, of catching the birds at night. This I have repeatedly endeavoured to effect without success. I am happy to say that, after much trouble, I have so far succeeded in determining this curious question. About nine o'clock of the evening of the 7th of March, in one of their nests which was built in a hole in an old wall, I caught the male and female, and three of the brood. The other four of the young birds which were also in the nest, made their escape. They were the Wrens I mentioned formerly as having occupied the two nests which wanted the lining of feathers.'"

"I know not," says Macgillivray, "a more pleasant object to look at than the Wren; it is always so smart and checrful—to it all weathers are alike. The big drops of a thunder shower no more wet it than the drizzle of a Scotch mist; and, as it peeps from beneath a bramble, or glances from a hole in the wall, it seems as snug as a kitten frisking on the parlour rug."

"It is amusing," continues this writer, "to watch the motions of a young family of Wrens just come abroad. Walking among furze, or broom, or juniper, you are attracted to some bush by hearing issue from it a lively and frequent repetition of a sound which most resembles the syllable "Chit." On going up you perceive an old Wren flitting about the twigs, and presently a young one flies off, uttering a stifled 'Chirr,' while the parents continue to flutter about, uttering their loud 'Chit! chit! chit!' with indications of varied degrees of excitement."

The Wren produces two broods in the course of the year, the first in April, the second in July. The eggs, from six to eight in number, are large and round, of a pure white or yellowish white, delicately spotted with reddish brown or blood-red, these latter markings often taking the form of a wreath at the broad end. The male and female brood alternately for thirteen days, and cleanse the nest and feed their hungry family with great assiduity. The young remain for a considerable time with their parents, and generally return to pass the night in their old homes for some time after they are fully fledged. Although largely insectivorous, these hardy little birds are enabled to brave the severest winters, not only of our own climate but of still more northern regions. They are not uncommon in Zetland, where their sweet notes serve greatly to enliven the dreary landscape.

The MARSH WRENS (*Thryothorus*) are a group of American species, distinguished from other members of the family by their comparatively long, thin, and slightly-curved beaks.

THE CAROLINA WREN.

The CAROLINA WREN (*Thryothorus Ludovicianus*), according to the Prince von Wied, is five inches long and seven broad; the wing measures two inches and one-sixth, and the tail an inch and three-quarters. The plumage of the upper portion of the body is reddish brown, marked with undulating lines of a deeper hue; the chin and throat are white, the rest of the lower parts yellowish red, with black markings on the sides; a stripe over the eyes is white. The quills are blackish brown on the inner, and striped on the outer web. The feathers of the wing-covers are tipped with white. The eye is greyish brown; the upper mandible light grey, the lower one lead-colour, tipped with pale brown. This species is the largest and most numerous of all the many species of Wrens inhabiting North America; it is met with alike in mountain tracts, low-lying regions, dense forests, or even districts near the abodes of man.

"The quickness of the motions of this little bird," says Audubon, "is fully equal to that of the mouse. Like the latter, it appears and is out of sight in a moment; peeps into a crevice, passes rapidly through it, and shows itself at a different place in the next instant. When satiated with food, or fatigued with these multiplied exertions, the little fellow stops, droops its tail, and sings with great energy a short ditty, something resembling the words '*Come to me, Come to me,*' repeated several times in quick succession, so loud, and yet so mellow, that it is always agreeable to listen to its music. During spring these notes are heard from all parts of the plantations, the damp woods, the swamps, the sides of creeks and rivers, as well as from the barns, the stables, and the piles of wood within a few yards of the house. I frequently heard one of these Wrens singing from the roof of an abandoned flat boat fastened to the shore, a short distance below the city of New Orleans. When its song was finished, the bird went on creeping from one board to another, thrust itself through an auger-hole, entered the boat's side at one place and peeped out at another, catching numerous spiders and other insects all the while. It sometimes ascends to the higher branches of a tree of moderate size, by climbing along a grape-vine, searching diligently among the leaves and in the chinks of the bark, alighting sideways against the trunk, and conducting itself like a true Creeper."

The vocal capabilities of the Carolina Wren would appear to be respectable, and it can imitate with tolerable accuracy the notes of other birds. "Amidst its imitations and variations," says Nuttall, "which seem almost endless, and lead the stranger to imagine himself, even in the depth of winter, surrounded by all the quaint choristers of the summer, there is still with our capricious and tuneful mimic a favourite theme, more constantly and regularly repeated than the rest. This was also the first sound that I heard from him, delivered with great spirit, though in the dreary month of January. This sweet and melodious ditty—*tsee-toot, tsee-toot, tsee-toot*, and sometimes *tsee-toot, tsee-toot, sect*, was usually uttered in a somewhat plaintive or tender strain, varied at each repetition with the most delightful and delicate tones, of which no conception can be formed without experience. That this song has a sentimental air may be conceived from its interpretation by the youths of the country, who pretend to hear it say '*Sweet-heart, sweet-heart, sweet!*' Nor is the illusion more than the natural truth, for usually this affectionate ditty is answered by its mate, sometimes in the same note, at others in a different call. In most cases it will be remarked that the phrases of our songster are uttered in threes; by this means it will generally be practicable to distinguish its performance from that of other birds, and particularly from the Cardinal Grosbeak, whose expressions it often closely imitates, both in power and delivery. I shall never, I believe, forget the soothing satisfaction and amusement I derived from this little constant and unwearied minstrel, my sole vocal companion throughout many weary miles of a vast, desolate, and otherwise cheerless wilderness. Yet, with all his readiness to amuse by his Protean song—the epitome of all he had ever heard or recollected—he was still studious of

concealment, keeping busily engaged near the ground, or in low thickets, in quest of his food ; and when he mounted a log or brush-pile, which he had just examined, his colour, so similar to the fallen leaves and wintry livery of Nature, often prevented me from gaining a glimpse of the wonderful and interesting mimic."

"The nest of the Carolina Wren," says Audubon, "is usually placed in a hole of some low, decayed tree, or in a fence stake, sometimes even in the stable, barn, or coach-house, should it there find a place suitable for its reception. I have found some not more than two feet from the ground in the stump of a tree that had long before been felled by the axe. The materials employed in its construction are hay, grasses, leaves, feathers, and horsehair, or the dry fibres of the Spanish moss ; the feathers, hair, or moss, form the lining, the coarse materials the outer parts. When the hole is sufficiently large, the nest is not unfrequently five or six inches in depth, although only just wide enough to admit one of the birds at a time. The number of eggs is from five to eight. They are of a broad oval form, greyish white, sprinkled with reddish brown. Whilst at Oakley, the residence of my friend James Perrie, Esq., near Bagon, Jura, I discovered that one of these birds was in the habit of roosting in a Wood Thrush's nest, that was placed on a low horizontal branch, and had been filled with leaves that had fallen during the autumn. It was in the habit of thrusting its body beneath the leaves, and, I doubt not, found the place very comfortable. They usually raise two, sometimes three broods in a season. The young soon come out from the nest, and, in a few days after, creep and hop about with as much nimbleness as the old ones. Their plumage undergoes no change, merely becoming firmer in the colouring."

THE HOUSE WREN.

The HOUSE WREN (*Thryothorus platensis*), a South American species, is brown on the upper portion of the body, shading into red towards the rump. The quills and tail-feathers are finely striped with blackish brown, the former edged with a paler shade on the inner web ; a pale streak passes over the eye ; the throat is white ; the region of the cheek striped with brown ; the throat, breast, and belly are pale reddish yellow, the sides of the breast being deepest in tint, and faintly streaked. The eye is deep brown ; the beak dark grey, whitish at its base ; the foot reddish brown. The length of the body is four inches and six lines, the breadth six inches ; the wing measures one inch and ten lines, and the tail an inch and a half. "This agreeable singing bird," says the Prince von Wied, "may be regarded as replacing our Common House Sparrow about the Brazilian houses. In appearance and habits it closely resembles the Common Wren, and is constantly to be seen hopping nimbly about the gardens and over the roofs and fences, or creeping with astonishing quickness through tiny holes or compact hedges. Its loud, sweet-toned voice is very similar to that of the True Warblers. The nests, which are small and carelessly constructed, are generally built upon the house-tops, or in holes of walls ; those we saw were open above and very shallow, formed externally of stalks and grass, thickly lined with feathers. The eggs, four in number, were rose-pink, marked with deep red."

THE FLUTE-PLAYER

The FLUTE-PLAYER (*Cyphorhinus cantans*), a very noted species of Wren inhabiting South America, represents a group distinguished by the following characteristics :—The beak is strong, compressed at its sides ; the nostrils small, round, quite open, and surrounded by a skin, whereas in other members of the family they are furnished with a covering ; the wings are short and much rounded ; the tail of moderate size, and graduated at its sides ; the legs are strong, and the moderate-sized toes armed with very disproportionately powerful claws. The upper part of the plumage is reddish brown, lightest upon the brow and top of the head. The mantle-feathers are marked with

blackish brown; the chin, throat, and front of the neck are light rust-red; the sides of the throat, cheeks, and region of the ear black, with white shafts to the feathers; the belly and centre of the breast are whitish yellow, the sides pale greenish brown, with dark markings. The length of this species is five inches, the wing measures two inches and one-sixth, and the tail one inch and one-third.

The Flute-player, as this bird is called by the Peruvians, on account of its strange and very beautiful voice, frequents the inmost recesses of the South American forests, where it lives in parties, and seeks for insects and berries either upon the ground or on such branches as are not more than two feet above its surface. During the middle of the day, according to Schomburghk, its song is rarely or never heard.

The PIPITS (*Anthi*) form, as it were, a connecting link between the Warblers and Larks, and until lately were classed among the latter birds. Their body is slender; their wings, in which the third and fourth quills are the longest, are of moderate size; the upper wing-covers often of great length; the tail of medium size; the tarsus slender; the toes weak; and the claws very large, the hindermost, like that of the Lark, being prolonged into a spur. The beak is thin, straight, narrow at its base, and awl-shaped, its margins turn inwards, and are incised at the slightly-curved tip of the upper mandible; the smooth, glossy plumage is of a brownish or greenish hue. The young usually resemble their parents. The family of Pipits comprises a great number of species distributed over all parts of the world, some occupying mountain tracts, and others forests, plains, or marshy districts. All live principally on the ground, and sometimes, but rarely, they perch on the branches of trees. Their manner of progressing on *terra firma* is rather by a rapid running step than by a series of leaps, and is accompanied by considerable agitation of the whole body, and constant gentle whisking of the tail. The flight of the Pipits is rapid, light, and undulatory, when they are desirous of going to any considerable distance, but changes to a hovering and fluttering motion when they rise into the air previous to singing. They are very intelligent, and their song, though simple, is agreeable; the call is a kind of piping sound, whence the name of Pipits, by which they are distinguished. Their principal food consists of beetles, moths, flies, snails, and aphides; some species also devour spiders and worms, and, according to recent observations, various kinds of seeds; all seek their food on the ground, and rarely seize their prey in the air, or by darting from the branches of trees or bushes. The nest is loosely formed of blades of grass, portions of plants and roots, lined with wool or hair, and is constructed on the ground. The eggs are of a dusky hue, and faintly marked with spots and streaks. The female alone broods, but both parents assist in tending the young. Most species lay more than once in the year.

THE MEADOW PIPIT, OR MEADOW TITLING.

The MEADOW PIPIT, or MEADOW TITLING (*Anthus pratensis*), is of a greenish brown, spotted with brownish black on the upper portion of the body; the breast is light rust-red, spotted with dark brown; the throat and belly are whitish, and a yellowish white streak passes over the eyes; the quills are brownish black, with light edges, and the feathers of the wing-covers bordered with dull green; the tail-feathers are brownish black, edged with olive-green, those at the exterior decorated with a large white spot at the tip. The eye is dark brown, the beak grey, and the foot reddish grey. This species is six inches long, and nine and a half broad; the wing measures two inches and five-sixths, and the tail two inches and a quarter. The female is a trifle smaller than her mate.

The Meadow Pipit is known to breed in all the northern half of the European continent, and is also met with in North-western Asia and North Africa. During the course of its journeyings in Egypt

it usually settles near the coast among marshes, or near fields that are lying under water. In the British Isles it remains throughout the year, and is known in the lake district as the "Ling Bird," from the constancy with which it frequents the moors overgrown with heather or *ling* in that part of the country. Like the Larks it migrates in large flocks, and frequently in company with those birds, travelling day and night; it usually makes its appearance in this country about March, leaving again in November or December. Meadows, marsh-lands, or commons, afford the resorts it prefers, but it generally avoids arid or barren districts. The movements and habits of this species resemble those of other members of its family; it lives on excellent terms with birds of its own kind, but constantly exhibits a strong desire to annoy and irritate its other feathered companions.

"When progressing from place to place," says Mr. Yarrell, "the flight of this bird is performed by short unequal jerks, but when in attendance on its mate, and undisturbed, it rises with an equal vibratory motion, and sings some musical soft notes on the wing, sometimes while hovering over its nest, and returns to the ground after singing. Occasionally it may be seen to settle on a low bush, but is rarely observed sitting on a branch of a tree, or perched on a rail, which is the common habit of the Tree Pipit. The Meadow Pipit, when standing on a slight mound of earth, a clod, or a stone, frequently moves his tail up and down like a Wagtail."

The nest is placed on the ground, sometimes so much sunk as to be with difficulty perceived; sometimes sheltered by a tuft of grass. It is composed externally of stems and leaves of grass, lined with finer grass, fibres, and hair.

W. Thompson, Esq., in his valuable communications on the natural history of Ireland, says that "A friend at Cromac has frequently found the nest of the Meadow Pipit on the banks of watercourses and drains, as well as on the ground in fields. One which was known to him at the side of a drain was discovered by some bird-nesting boys, who pulled away the grass that concealed it. On visiting it the next day he observed a quantity of withered grass laid regularly across the nest; on removing this, which, from its contrast in colour with the surrounding grass, he considered must have been placed there by the boys, the bird flew off the nest, and, on his returning the following day, he found the grass similarly placed, and perceived a small aperture beneath it, by which the bird took its departure, thus indicating that the screen, which harmonised so ill with the surrounding verdure, had been brought thither by the bird itself. The same gentleman once introduced the egg of a Hedge Accentor into a Meadow Pipit's nest containing two of its own eggs, but, after a third egg was laid, the nest was 'abandoned.'" "This, however," observes Mr. Yarrell, "was probably induced by the visits of the observer rather than by the introduction of the strange egg, as the egg of the Cuckoo is more frequently deposited and hatched in the nest of the Meadow Pipit than in that of any other bird."

The eggs, four or five in number, have a dirty white or dull red shell, thickly strewn with brownish spots and streaks; they are generally hatched in thirteen days. The young leave the nest before they can fly, but conceal themselves with such adroitness at the first alarm of danger that they are rarely discovered. The first brood is produced in the beginning of May, and by the end of July the nestlings are capable of providing for themselves.

THE TREE PIPIT.

The TREE PIPIT (*Anthus arboreus*) so closely resembles the species above described as very frequently to be mistaken for it. It is, however, distinguishable by its superior size, the comparative strength of its beak and tarsi, and the shortness of the much curved centre claw. The upper part of the body is yellowish brown, or dull brownish green, darkly spotted in stripes; the rump and under side are of one uniform tint; a stripe over the eyes, the throat, crop, sides of the breast, legs,

and lower wing-covers, are pale reddish yellow ; the crop, upper breast, and sides, being spotted with black. The stripes on the wings and edges of the shoulder-feathers are lighter than in the plumage of the Meadow Pipit. The eye is brown, the beak greyish black, and the foot reddish grey. The body is six inches and a half long, and ten and three-quarters broad ; the wing measures three inches and a quarter, and the tail two inches and a half. The female is considerably smaller than her mate. During the summer the Tree Pipits frequent the woodland districts of Europe and Siberia, and in the winter wander southward as far as the African steppes and the Himalayas ; they usually arrive in England about the third week in April. In many respects these birds resemble their congeners, but, unlike most of them, take up their quarters in well-wooded and cultivated localities, and at once seek shelter in trees at the approach of danger, and run along the branches with ease. They are also far



THE TREE PIPIT (*Anthus arboreus*).

less social in their habits, and, except in the autumn, while still occupied with their young, live alone, or associate but seldom with the other feathered denizens of their favourite woods and groves. The song of the Tree Pipit far exceeds in its quality that of most other species ; indeed, some of its loud, clear tones will bear comparison with those of the Canary. The male sings almost incessantly from sunrise to sunset, until the end of June, and pours out his lay from the point of some projecting branch, from whence he rises into the air, and after hovering for a short time slowly descends and finishes his song upon the perch he had just left. The nest is placed in a hollow in the ground, or carefully concealed in grass and clumps of plants ; it is very clumsily built, only the interior being arranged with anything like neatness or care. The four or five eggs vary considerably both in form and colour, the tints being either reddish, greyish, or blueish white, spotted, mottled, or streaked with a darker shade. The female sits with such devotion that she often will not quit her eggs unless driven from the spot. The young are most tenderly reared by the exertions of both parents, and quit the nest before they are able to fly.

"The Tree Pipit," says Mr. Yarrell, "is a summer visitor to this country, arriving about the third week in April, and frequents the enclosed and wooded districts of England. It is not uncommon around London, and I have observed it frequently in the highly-cultivated and wooded parts of Kent. The male has a pretty song, perhaps more attractive from the manner in which it is given than the quality of the song itself. He generally sings while perched on the top of a bush, or one of the upper branches of an elm-tree, standing in a hedgerow, from which, if watched for a short time, he will be seen to ascend on quivering wing about as high again as the tree, then, stretching out



THE ROCK PIPIT (*Anthus petrosus*).

his wings and expanding his tail, he descends slowly by a half-circle, singing the whole time, to the branch from which he started, or the top of the nearest other tree; and, so constant is this habit with him, that if the observer does not approach too near to alarm him, the bird may be seen to perform this same evolution twenty times in half an hour, and I have witnessed it most frequently during and after a warm May shower." "The Tree Pipit," continues Mr. Yarrell, "is found in all the wooded and cultivated districts of the southern counties of England, but is seldom met with in open unenclosed country. It is comparatively rare in Cornwall; not very numerous in either North or South Wales; and some doubts are still entertained whether it extends its range to Ireland."

In a communication from Mr. Weir (who observed the birds in East Lothian) to Mr. Macgillivray, he says:—"The Tree Pipits generally make their appearance here about the beginning of May, and

frequent the woods. They perch upon the highest branches of a tree, from which they ascend into the air, uttering a twittering note at each extension of the wings. They send forth their song during their descent, which they perform with wings extended and tail erected, till they again reach the tree, where they continue a short time after perching, and then descend to the ground in the same manner. They generally build their nests in plantations, at the root of a tree, and amongst long grass. It is very difficult to discover them, as they are so cunningly concealed, and as the birds generally run several yards from them before they mount into the air. The nest in which I caught the old ones being in a park grazed by cattle, and very near a plantation, afforded me an excellent opportunity of observing their motions. When they fed their young ones, which they did with flies, caterpillars, and worms, they always alighted at the distance of twenty or thirty feet from their nests, cowering, and making zig-zag windings, and now and then putting up their heads and looking around them with the greatest anxiety and circumspection. They are seldom met with in my neighbourhood ; and, in the long space of fourteen years, I have seen only two or three of their nests."

"The Indian Tree Pipit," says Jerdon, "is very similar to its European congener, but appears to differ slightly. It is found over all India in the cold season, for it is a winter visitant, only coming early in October and departing about the end of April. It frequents gardens, groves, thin tree jungle, also occasionally grain-fields, beds of woody streams, &c. It is social in its habits, many birds being generally found together. It usually feeds on the ground on various insects, and also on seeds, but, on being disturbed, flies up at once to the nearest tree. It now and then feeds on trees, hopping about the upper branches, and occasionally snapping at an insect on the wing. It is said by the natives to kill many mosquitoes, hence many of its native names. Mr. Blyth says he has seen small parties of these birds flying over their haunts, in a restless unsettled way, now and then alighting on a tree, uttering a slight chirp, and continuing this till nearly dark. The flesh of this species is used by falconers as a restorative to the Bhagri, and is said to be very delicate. It is taken in numbers for the table in Bengal and elsewhere, and sold as Ortolan."

THE ROCK PIPIT.

The ROCK PIPIT, SHORE PIPIT, or SEA TITLING (*Anthus petrosus*, or *aquaticus*), is deep olive-grey, spotted faintly with blackish grey on the back and greyish white upon the lower portion of the body, the sides of the breast being spotted with dark olive-brown ; a light grey streak passes over the eyes, and the wing is enlivened by the light grey borders ; the eye is dark brown. This species is from six inches and three-quarters to seven inches long, and from eleven and a quarter to eleven and a half broad ; the wing measures three inches and a half, and the tail two and three-quarters. The claw of the hinder toe is long and very much curved. Unlike their congeners, the Rock Pipits inhabit mountain ranges, and only descend upon the plains during their migrations. In the Swiss Alps they are exceedingly common birds. "In spring," says Tschudi, "this species appears upon such parts of the mountains as are free from snow, and in summer large flocks seek safety from the violent storms that frequently break over the Alps in more sheltered situations. As winter approaches, and the cold becomes more severe, they venture down into the plains beneath, and occupy marsh-land and the neighbourhood of lakes or streams." In Great Britain they remain upon the coast throughout the year, and are seldom seen at any great distance from the sea ; how far north they wander seems uncertain, for it is at present undecided whether the SHORE PIPIT (*Anthus rupestris*), a bird found throughout the whole of Scandinavia, is the same, or merely a nearly allied species. During the breeding season the Rock Pipits entirely lay aside the timidity they exhibit at other times, and boldly approach any intruder on their privacy, flapping their wings as they fly about him, and uttering loud and anxious cries. Their pleasing song, which is heard about the end of July,

is poured out with great rapidity, as they rise quickly into the air; and after hovering for a time, with a gentle swimming motion, slowly descend, with wings outspread, to the spot from which they rose. They very rarely sing when perching on the rocks or bushes. The nest is far less carefully concealed than that of other Pipits, and is generally placed in a crevice, hole, or under a tree-root so situated as to afford an overhanging shelter to the little family. The eggs, from four to seven in number, have a dirty white shell, very thickly marked with various shades of brown and grey; they bear a considerable resemblance to those of the Common House Sparrow. Tschudi tells us that on the Alps it is not uncommon for both parents and young to perish in the heavy snow that often falls in spring.

"Though called the Rock Pipit," observes Mr. Yarrell, "it inhabits as well low, flat shores in the vicinity of the sea, and the neighbouring salt marshes, where it feeds on marine insects, sometimes seeking its food close to the edge of the retiring tide. I have seen these birds very busily engaged in the examination of sea-weed, apparently in search of the smaller crustacea. This species is readily distinguished from the Tree and Meadow Pipit by its larger size. The hind claw is long and very considerably curved. The localities frequented by the Rock Pipit are, however, strikingly distinguished from those in which the other Pipits are so constantly found. I do not remember to have seen the Rock Pipit except within a short distance of the sea-shore; and so generally is it there distributed, that I never remember looking for it, when visiting any part of our sea-coast, without finding it. It does not wander far inland, and is very seldom seen at any considerable distance from the sea. It remains in this country on the coast throughout the year."

"The Rock Pipit," Mr. Lloyd tells us, "is exceedingly common on the whole coast of Scandinavia, from Scania to North Cape. Every rocky islet, indeed," he continues, "is occupied by a pair or two of these birds, but I do not remember having seen them in the interior of the country."

"The fishermen in the province of Blekinge look upon the Rock Pipit as a very useful bird, for the reason that when the water is low it repairs to the bare rocks, and feeds on the *grund märta*, a little shrimp or crustacean, which is so injurious to their nets that, during a long autumnal night, it will destroy them altogether."

"The female forms her nest on grass-grown ledges of rocks, but, though in appearance pretty substantial, it is so fragile that it falls to pieces at the least handling. She lays from four to five eggs of a greyish brown or greenish brown colour, marked with ash-brown spots, and usually hatches at the beginning of May."

THE STONE PIPIT, OR FALLOW-LAND PIPIT.

The STONE PIPIT, or FALLOW-LAND PIPIT (*Agrodroma campestris*), the largest member of this family, represents a group of slenderer form, and having a stronger beak and foot than those above described. The length of this species is from six inches and three-quarters to seven inches, its breadth ten inches and a half to ten inches and three-quarters; the wing measures three inches and a quarter, and the tail two inches and five-sixths. The upper parts of the body are pale yellowish grey, sparsely marked with clearly-defined dark spots; the under side is dirty yellowish white; the feathers over the crop have dark streaks on the shafts; a light yellow line passes over the eye; and the wings are decorated with yellowish white stripes. The young are darker, and their feathers edged with yellow. The region of the crop is also much spotted.

The Fallow-land Pipit frequents unfruitful, arid, or stony localities, such as are avoided by other members of the family, and is far more numerous in the southern countries of Europe than in the northern parts of our continent. Bolle tells us that it inhabits the hottest and most barren districts

of the Canaries in very large numbers, and in the Balearic Isles it is one of the commonest birds; we have ourselves met with it during the winter in all parts of North-eastern Africa and in Soudan. Jerdon also mentions it as frequenting some parts of India. It is a remarkable fact that though this species is so numerous in the Balearic Isles, it is comparatively rarely seen in Spain, except during its migrations. In most parts of Europe it usually arrives in April and leaves for warmer regions at the end of August; in fine weather the flocks journey by day, but if the season be unfavourable they pursue their course principally during the night. In its movements and habits the Fallow-land Pipit much resembles both the Larks and Wagtails. It runs upon the ground with extraordinary rapidity, usually preferring the furrows of ploughed fields or dry ditches, when in search of food, and



THE FALLOW-LAND PIPIT (*Agrodroma campestris*).

frequently pauses in its labours to perch upon a stone or clod, and survey surrounding objects; while thus quietly resting, the body is held erect and the tail lowered, but when the bird is excited, the tail is agitated after the manner of a Wagtail. When in flight the wings rapidly open and close, the undulatory course thus produced being diversified by a slow hovering motion, or by a direct descent towards the earth, with pinions completely closed. Such of these birds as inhabit Europe are extremely shy, but those occupying the Canary and Balearic Isles boldly approach the houses, and evidently prefer to be in the immediate neighbourhood of man. The song of the Fallow-land Pipits is extremely simple and monotonous. During the breeding season each pair takes possession of a certain spot, from whence they drive off every intruder, and the male at once commences a series of vocal exercises for the entertainment of his mate; these he carols forth as he soars in the air. The nest, which consists of moss, earth, and dry leaves, lined with softer materials, is built upon the ground. The first eggs are laid about the end of May, and in July the nestlings are fully fledged.

"The Stone Pipit (*Agrodroma campestris*)," says Jerdon, "is found in suitable places in India. I have found it most abundant in the Deccan, at Mhoa, in Central India, and on the Eastern

Ghauts; it is rare in the Carnatic. Blyth has it from Midnapore and the North-western Provinces. It frequents barren, open, stony land, and is never found in rich pastures. It breeds in this country (India). In Palestine it is recorded as frequenting the lower plains and hills."



WREN AND WAGTAILS.

The SPURRED PIPITS (*Corydalla*) are recognisable by their large size, pointed wing (in which the three first quills are of equal length), their long tail, incised at its extremity, and high slender foot, the hinder toe of which is furnished with a claw of great length.

RICHARD'S SPURRED PIPIT.

RICHARD'S SPURRED PIPIT (*Corydalla Richardii*).—The mantle of this species is of a dull brown, each-feather having a light edge; the region of the cheeks, a stripe over the eye, and the entire under side are yellowish white, shaded with grey upon the breast; the sides of the throat are white, decorated with oval, dark brown spots; the centre quills are greyish brown, broadly shaded with light reddish grey on the inner web; the outer web of the first quill is almost white, the rest shade gradually into reddish yellow; the middle tail-feathers are brownish black, the others, like those of the wing, become gradually lighter, the outer feathers being nearly entirely white. The summer plumage is deeper in tint, and the edgings to the feathers more clearly defined than at other seasons. The eye is brown, the upper mandible dark brown, the lower one yellow towards its base; the feet are yellowish brown. This bird is from seven inches and a half to eight inches long, and twelve inches and a half broad; the wing measures three inches and four-fifths, and the tail three inches and a quarter.

The Spurred Pipits frequent Great Britain, Spain, France, Italy, Austria, Greece, and Sardinia, but are never seen in large numbers; they are also occasionally found in Heligoland; and Jerdon informs us that during the winter they are met with in the Himalayas, Bengal, Nepaul, Ceylon, Burmah, and other parts of India; at the latter season, according to Swinhoe, they are also numerous in Central China. We ourselves have never succeeded in finding the true *Corydalla* in either Spain or Africa. Marshes, boggy districts, and the grassy margins of ponds or streams, are the localities to which they resort. Jerdon tells us that they particularly frequent rice-fields, always associating in small parties. Their flight is light, graceful, and undulating. The nest, which is very flat, and placed in a hollow or hole in the ground, is formed of stalks woven together with fibres. The eggs, usually laid about May, are oval, glossy, and of a delicate blueish white, spotted with blueish grey, yellowish brown, or dark brown, and occasionally spotted and streaked with brownish grey; they much resemble those of the Meadow or Rock Pipit. We learn from Jerdon that a large number of these birds are sold in the markets of Calcutta, and passed off as *Ortolans*.

This species was first found in England by N. Vigors, Esq., in 1812, since which time a few other specimens have been seen in different parts of the island. According to Yarrell, "The habits of the Spurred Pipit—as far as the peculiarities of so rare a bird can be known, for it is equally scarce on the Continent—are said to be very similar to those of other Pipits. It is mostly observed on the ground, frequenting old pastures, where it stands very high and runs with facility, waving the tail up and down, with a gentle airy motion, like that observed in the Wagtails, while its long hind claw, but slightly curved, connects it with the Larks; it has, like them, an agreeable song."

The WAGTAILS (*Motacillæ*) are readily distinguished from the Pipits by the comparative slenderness of their shape; their legs are high and thin, the wings of medium size, the third quill longer than the rest, and the secondaries scarcely longer than the primaries; the tail is very long, composed of narrow feathers, and often forked at its extremity. The beak is slender, straight, and awl-shaped, with a ridge at its culmen, and slightly incised at its tip. The plumage is much variegated, differs somewhat according to the sexes, and is twice moulted.

The various members of this family inhabit the eastern hemisphere, and within its limits are met with in every latitude; most species prefer the immediate vicinity of water, but some few often seek their food in comparatively arid situations, returning, however, within a few hours to their usual haunts. The movements of the Wagtails are characterised by considerable liveliness and grace, they are neither so hurried nor so rapid as those of the Pipits. Upon the ground they generally walk with

a thoughtful, deliberate bearing, bowing the head at each step, and agitating the tail so incessantly as to entitle them to the name by which they are commonly known. Their flight is light and undulatory, being produced by a rapid opening and closing of the wings, and their song, though by no means powerful, is simple and pleasing. Flies, beetles, and larvæ of all kinds afford them their principal means of subsistence; these they not only seek upon the ground, but pursue them to a considerable distance through the air. The northern species migrate as far as Central Africa and India; others only wander somewhat farther south, but few remain throughout the entire year in their native land. The nest, which is carelessly formed of twigs, roots, straw, grass, moss, and dry leaves, is lined internally with wool, or some similar material, and is constructed in holes or hollows in the vicinity of water; if no stream or pond is at hand, a mere pool will often satisfy the requirements of the building pairs. The eggs have a thin, finely-spotted, light grey shell. The nestlings, when first fledged, entirely differ from the parents in their appearance.

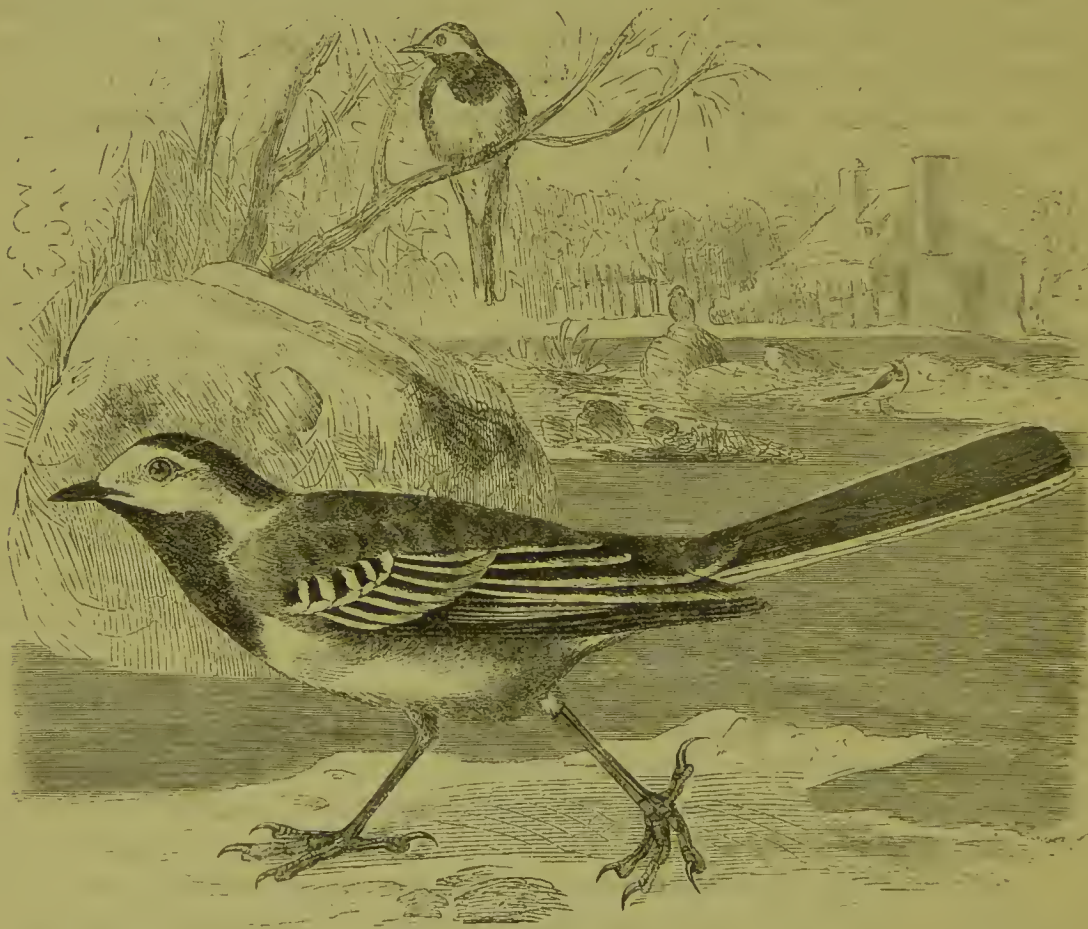
Most species of Wagtail exhibit a decided predilection for the immediate neighbourhood of man, whose favour they almost invariably obtain by their confiding and lively disposition.

THE WHITE WAGTAIL.

The WHITE WAGTAIL (*Motacilla alba*) is grey upon the mantle, the nape is of velvety blackness, the throat and upper part of breast are also black, the rest of the under side brown, while the bridles, cheeks, and sides of the throat are white; the quills are black, edged with whitish grey; the centre tail-feathers are black, the rest white. The female resembles her mate, but the black patch upon her throat is of smaller size. After the moulting season both sexes have a white patch upon the throat, surrounded by a horseshoe-shaped black line. The young are of a dull grey above, and grey or dirty white beneath, with the exception of a dark line on the throat. The eyes of all are deep brown, the beak and feet black. This species is seven inches and a half long, and ten inches and two-thirds broad; the wing measures three inches and a quarter and the tail three inches and three-quarters.

The White Wagtail is found in every part of Europe; in Africa as far as eleven degrees north latitude; and in Asia as far south as Aden; it appears in Europe about March, and leaves again in October or December. Like other members of its family this species frequents the neighbourhood of water, and lives in a state of continual restlessness; even when the bird is not running to and fro, the tail is constantly agitated. Its movements closely resemble those of other Wagtails, and its song is agreeable but very simple. Although social as regards their own kind, these birds always exhibit a most pugnacious and daring disposition towards the rest of their feathered companions, whatever their size or powers; indeed, so entirely are they free from any timidity, or sense of inferiority, that they often combine in parties, and pursue really large birds of prey, meanwhile uttering such loud cries as warn the whole neighbourhood of the impending danger; the enemy having been routed the party separate, after noisily expressing their pleasure at the feat they have accomplished. Insects and larvæ afford them their principal means of subsistence; it is not uncommon to see these bold birds seize their prey from under the very feet of the cattle as they graze, or follow the footsteps of the ploughman as he turns up the earth. The pairing season is inaugurated by desperate battles between the rival males, who confront each other upon the ground and fight till one or the other is compelled to quit the field. No sooner has the victor obtained undisputed possession of his prize, than his whole demeanour changes, and he becomes as tender and gentle as he was before fierce and quarrelsome. Each couple takes possession of a particular spot, and within its limits make their nest, placing it indifferently in the most diverse situations. The little structure is formed of twigs, roots, and grass, hay, leaves, and a great variety of similar materials, and lined with wool, hair, or other equally elastic substances. The first brood is laid in April, and consists of from six to eight eggs

of a grey or blueish white hue, thickly spotted and streaked with grey; the second batch of eggs is produced in June. The female alone broods, but both parents assist in the business of feeding the hungry nestlings, who grow with great rapidity, and are soon able to take care of themselves. In the autumn young and old again assemble, and pass the night in reed-covered marshy localities, in company with Swallows and Starlings; as the season advances these parties increase to large flocks, which during the day fly from one ploughed field or pasture to another, always keeping in a direct course towards their winter quarters, and, when night has set in, they rise together into the air, and amid loud outcries, start forth upon their long and wearisome pilgrimage.



THE WHITE WAGTAIL. (*Motacilla alba*).

"The belief expressed in the first part of this work," says Mr. Yarrell, in his third edition of his valuable work on British Birds, "that this species is the true *Motacilla alba* of Linnæus, has been verified in several instances; the coloured figures and descriptions of Swedish and other Continental authors leave us no room to doubt, and when the subject has been further investigated, it will probably be found that the present species is the real *Motacilla alba*, and therefore called the White Wagtail. It is only a summer visitor to Britain, while many of the better known Pied Wagtails remain with us all the year."

In the south of Sweden, where this Wagtail appears about the time the ice is breaking up, it is called "Is Spjärna"—literally, the "kicker away of the ice." In some places it goes also by the name of the "Kök Ärla," or the "Clod Wagtail," because it is so constantly seen amongst the clods in the

newly-ploughed fields. There is, moreover, a saying in parts of Sweden, that if the farmer commences ploughing either before the coming or after the departure of the White Wagtail, success will not attend his labours.

THE PIED WAGTAIL.

The PIED WAGTAIL (*Motacilla Yarrelli*) was formerly supposed to be identical with the bird just described. Mr. Gould, who first decided that the two species were quite distinct, thus discriminates between them, in a communication to the *Magazine of Natural History*:—"The Pied Wagtail of England is somewhat more robust in form than the true *Motacilla alba*, and in its summer dress has the whole of the head, chest, and back of a full, deep jet-black; while in the White Wagtail (*Motacilla alba*), at the same period, the throat and part of the head alone are of this colour, the back and the rest of the upper surface being of a light ash-grey. In winter the two species more nearly assimilate in their colouring; and this circumstance has doubtless been the cause of their being hitherto considered identical, the black back of *Motacilla Yarrelli* being grey at this season, although never so light as in *Motacilla alba*. An additional evidence of their being distinct (but which has doubtless contributed to the confusion) is, that the female of our Pied Wagtail never has the back black, as in the male; this part, even in summer, being dark grey, in which respect it closely resembles the other species."

"The Pied Wagtail of this country," says Mr. Yarrell, "though a very common bird, is deservedly admired for the elegance of its form, as well as for the activity and airy lightness exhibited in all its actions. It is ever in motion, running with facility by a rapid succession of steps in pursuit of its insect food, moving from place to place by short undulating flights, uttering a cheerful chirping note while on the wing, alighting again on the ground with a sylph-like buoyancy and a graceful fanning motion of the tail, from which it derives its name. It frequents the vicinity of ponds and streams, moist pastures, and the grass-plots of pleasure-grounds; may be frequently seen wading in shallow water seeking for various aquatic insects or their larvæ; and a portion of a letter sent me lately by William Rayner, Esq., of Uxbridge, who keeps a variety of birds in a large aviary near his parlour window for the pleasure of observing their habits, seems to prove that partiality to other prey besides aquatic insects, has some influence in the constant visits of Wagtails to water. "I had," says that gentleman, "during the year 1837, several Wagtails, the pied and yellow, both of which were very expert in catching and feeding on minnows which were in a fountain in the centre of the aviary. These birds hover over the water, and, as they skim the surface, catch the minnow as it approaches the top of the water in the most dexterous manner; and I was much surprised at the wariness and cunning of some Blackbirds and Thrushes in watching the Wagtails catch the minnows, and immediately seizing the prize for their own dinner."

The nest of our Pied Wagtail is formed of moss, dead grass, and fibrous roots, lined with hair and a few feathers. It is sometimes placed on the bare ground on a ditch bank, sometimes in a hole of a wall, or thatch of an outbuilding, and it is frequently fixed in the side of a wood-stack or hay-rick; occasionally it has been found occupying a cavity in a peat-stack or a wall of turf sod, but always in the vicinity of water. The eggs are four or five in number, white, speckled with ash-colour, nine lines in length and seven lines in breadth.

Mr. Jesse, in his "Gleanings in Natural History," records an instance of a Water Wagtail building her nest in one of the workshops of a manufactory at Taunton:—"The room was occupied by braziers, and the noise produced by them was loud and incessant. The nest was built near the wheel of a lathe, which revolved within a foot of it. In this strange situation the bird hatched four young ones; but the male not having accustomed himself to such company, instead of feeding the

nestlings himself, as is usual, carried such food as he collected to a certain spot on the roof, from whence it was borne by his mate to the young. It is still more remarkable that she was perfectly familiar with the men into whose shop she had intruded, and flew in and out of it without fear. If, by chance, a stranger or any other of the persons employed in the same factory entered the room, she would, if in her nest, instantly quit it, or, if absent, would not return; the moment, however, that they were gone she resumed her familiarity."

THE DHOBIN.

The DHOBIN (*Motacilla Dukhunensis*) is the Indian representative of the species just described. During the summer this bird is pale grey on the back and scapulars, a supercilian streak, the nape, wings, centre feathers of the tail, the throat, and breast, are black; the eyebrows, a spot on the wings, the exterior tail-feathers, and belly are white, and the secondary quills are dark grey, bordered with white. In the winter the chin, throat, and region of the eye, are white, and only a small black spot is visible on the breast; the top of the head and nape are then grey. The eye is brown, and the beak and feet black. The length of this species is from seven inches and a half to eight inches; the wing measures three inches and five-eighths; and the tail four inches and three-quarters.

The Dhobin is met with throughout the whole of Ceylon and Southern and Central India, and is very common in the Deccan; it usually makes its appearance in October, and remains till March or April. It is at present unknown where this species breeds; and we have but little information respecting its habits, except that it lives in close proximity to houses, frequently entering within doors to seize the flies as they skim about the rooms; during the day it remains solitary, but in the evening goes with its companions to the margin of some stream or other piece of water, there to pass the night.

This bird closely resembles the *Motacilla alba* of Europe, but is distinguished by its great ear patch, and by the blackness of the ear-feathers, and of the neck all round. "This Wagtail," says Jerdon, "is found throughout Southern and Central India, extending into the North-western Provinces, Sindh, the Punjab, and Affghanistan. Adams, however, says that he did not see it in Peshawur, and that the former species is the Common Wagtail of Cashmere. It is also found in Ceylon. It is not very abundant in the extreme south of the peninsula, but is very common in the Deccan and in Central India, coming in about the middle of October and leaving in March or April. It is a very familiar bird, feeding close to houses, stables, and in gardens; often, indeed, entering verandahs, and coming into an open room if not disturbed. It runs about briskly after small insects, and is very active in catching the flies that infest the vicinity of stables and outhouses. A small party of these birds may often be seen towards evening on the bank of a river or tank, though, when feeding, they are usually solitary."

THE ROCK WAGTAIL.

The ROCK WAGTAIL (*Motacilla Lichtensteinii*) inhabits the valley of the Nile, and frequents such parts of that river as are traversed by rocks or huge masses of stone. Its plumage is simple but striking in its coloration; the entire mantle, sides of throat, and breast, are of a rich deep black; a stripe over the eyes, a patch on the throat, a spot on the wing-covers, the exterior tail-feathers, and under side are white; the eye is brown; the beak and feet black. In its movements this species closely resembles those of its family already described, but is distinguished from them by its habit of frequenting such portions of rock or stone as are entirely surrounded by water; in Nubia it is very common, but is rarely met with in any but the most stony districts. According to our own experience the Rock Wagtail lives in pairs, each couple keeping within the limits of its own domain, and violently resenting any attempt at intrusion. Like the rest of their brethren these birds are

extremely quarrelsome, and live in a state of constant warfare with such of the northern species as take up their winter quarters in their vicinity. The nests which we found were always situated in holes or clefts in the rocks.

THE MOUNTAIN WAGTAIL.

The MOUNTAIN WAGTAIL (*Calobates sulphurea*) represents a group of Wagtails recognisable by their comparatively short wings, long tail, and delicate beak; the sexes also differ in the coloration of their plumage. During the spring the male is deep grey upon the back and sulphur-yellow on the under side; the black throat is divided from the grey back by a white line, a similar streak passes above the eyes, and the wing is enlivened by two light grey stripes; when quite old the females resemble their mates, but the yellow under side is of a paler hue, and the black on the throat less pale; when young, the females have only a white or dingy grey spot on the throat. The young of both sexes are of a dull ash-grey above and yellowish grey beneath, the throat is greyish black, spotted with blackish grey; the eye is dark brown, the beak black, and the foot horn-grey. This species is seven inches and two-thirds in length, and its breadth is nine inches and three-quarters; the wing measures three inches and a quarter, and the tail four inches.

The Mountain Wagtail occupies not only European mountains, but those of Asia and Africa. It is comparatively rare in Northern Europe, but is numerous met with about the lofty peaks of its southern portions. The great extent of country over which this species is found is the more remarkable, because even such Mountain Wagtails as inhabit Central Europe either remain throughout the year in their native haunts, or merely wander for a comparatively short distance in a southerly direction. Bolle tells us that they are commonly seen in the Canary Islands; and Jerdon informs us that they appear in India in September, leaving again about the first week in May; this latter statement is worthy of notice from the fact that such as quit Europe at the approach of autumn do not leave us earlier than September, and return before May. The localities to which these birds usually resort are in the vicinity of mountain streamlets and lakes, but they are also frequently seen about meadows or upon house-tops, and in some countries evidently prefer the society of man. Their flight is light, rapid, and often long sustained; they move upon the ground with the utmost ease, turning their bodies about as they run, much after the fashion of an animated dancer. The tail is held slightly raised, in order to prevent it from getting wet, and great care is taken to prevent any part of the plumage from being soiled. So entirely are they without fear of man, that they not only freely venture close to his dwellings, but permit a friendly stranger to approach near to them, without quitting the spot on which they are perched. If, however, they feel that they are pursued, they at once become so timid as to render their capture extremely difficult. Their voice is deceptively like that of the White Wagtail. Two broods are produced within the year, the first in April, the second in July. During the whole period of incubation the demeanour of the male is very restless; he flutters hither and thither, flapping with his wings, and perches from time to time upon certain chosen spots, in order to pour out his song of rejoicing; at this season his vocal performance possesses unusual sweetness. The nest is placed near the water in holes under roots of trees, or amongst stones; it varies considerably both as to size and the care with which it is constructed; the outer wall is generally formed of roots, leaves, grass, or moss; upon this is arranged a second layer of somewhat finer materials, and the interior is neatly lined with hair, wool, or vegetable fibres. The eggs, from four to six in number, are of a dark grey or blueish white, veined and spotted with yellow or dark grey. The female usually broods, and exhibits such devotion to her progeny, that, when sitting, force must be employed to remove her from the nest. The young are very carefully nurtured.

This species is spread throughout all India and Ceylon ; it is very generally met with in the hilly and wooded parts, but is rare in the open country, especially towards the south of India, the Carnatic, and the bare table-land ; it is apparently most abundant in Bengal and the more northern districts.

"It occasionally," says Jerdon, "is to be seen on the banks of rivers, but is more generally found in gardens near houses, in towns and villages, and on walks in the forest, or where there is sufficient shelter. Mr. Blyth, who had abundant opportunities for observing it, says he has seen it



THE MOUNTAIN WAGTAIL (*Calobates sulphurea*).

tripping over the filthiest narrow black drains between hut and hut in the native town of Calcutta. It occasionally, though rarely, perches upon trees, and has the jerking motion of its tail more remarkably noticeable than any other member of the entire group, for it appears unable to keep it in repose even for a moment."

The SHEEP WAGTAILS (*Budytes*), a group of European birds, are recognisable from the other members of their family by their short tail, the straight long nail on the hinder toe, and the brilliancy of the plumage, which varies in the two sexes, insomuch that naturalists are undecided as to whether certain species of these Wagtails are distinct or identical.

THE COW OR MEADOW WAGTAIL.

The COW OR MEADOW WAGTAIL (*Budytes flavus*) is blueish grey upon the head and nape, the back is olive-green, and under side bright yellow, the quills and tail are of a blackish hue, with light borders; a pale stripe passes above the eyes, and two yellow lines across the wings; in the female and young all the colours are fainter and greyer than in the male bird. The eye of all is dark brown, the beak black, the base of the lower mandible light blue, and the foot black.

The Meadow Wagtail is generally found in the central and northern parts of Europe; it frequents meadows and the banks of small streams, and feeds principally upon flies and aquatic insects. The nest is built in holes in meadow ground, or at the foot of trees; the eggs are six in number, with light flesh-coloured blotches. Gould supposes these birds, although not visiting England, to be numerous on the Continent. He received one that he tells us was shot in the neighbourhood of Paris, and in May specimens were killed in Sweden by N. C. Strickland, Esq. From the account of this gentleman, their manners are very different from those of our Yellow Wagtail, as they run about with the tail elevated, and the wings hanging down and spread. We have also received the bird from the Himalaya Mountains. The first British specimen was shot near Colchester by Mr. Henry Doubleday, who was attracted by observing a pair of birds together, long after the time that our Common Yellow Wagtail leaves the country. In 1836 two were seen near Edinburgh, and others have since been seen at intervals in different parts of England.

RAY'S WAGTAIL.

RAY'S WAGTAIL (*Motacilla* or *Budytes Rayi*)—the Yellow Wagtail, formerly called *Motacilla flava*—so well known as a summer visitant to England, is very rare on the continent of Europe, where the preceding species, called by Continental authors *Motacilla flava*, is found. Mr. Gould was the first to point out the difference between the two, and to assign to the British species the name of Ray's Wagtail, in memory of the distinguished naturalist by whom it was first observed.

"In Ray's Wagtail," says Yarrell, "the line over the eyes and ear-covers is yellow, and the back of the head is, I believe, invariably the same as the back of the bird; while, in the Grey-headed Wagtail, or Continental species, the white elongated line over the eyes and ear-covers appears to be permanent, and the grey head is more or less conspicuous at all seasons, particularly in summer. The females of the two species most resemble each other.

The Yellow Wagtail (*B. Rayi*) comes to us from the south, appearing at the end of March or beginning of April, and leaving us in September. It frequents ploughed fields and uncultivated ground covered with furze; it makes its nest both in arable land and fields of wheat and tares, and does not appear so partial to water as other species. "It frequents," says Mr. Yarrell, "dry fallows and fields of young corn, where, perched upon a clod or stone, it exhibits its rich yellow breast to great advantage." The nest, which is placed upon the ground, is formed of dry stalks and fibres, and lined with hair. The eggs, from four to six in number, somewhat resemble those of the Sedge Warbler; they are of a whitish hue, mottled with various shades of brown. The young begin to fly about the end of May, and from that time till the season for migration, may be seen following their parents in search of food, keeping so close to the feet of cattle and sheep as to be in constant danger. A writer quoted by Mr. Yarrell says, "I have seen whole parties of Yellow Wagtails running and dodging close to the cows' heads, apparently catching small insects. I suppose the cattle disturbed the flies which are the favourite food of this bird, and lodge in the grass, and which, as they arose, were caught by the watchful Wagtail, before they could secure their retreat. The call-note of this bird resembles that of other species, although more shrill than that of the White

Wagtail; it consists of two notes, repeated in succession, the second of which is one whole tone lower than the other."

THE VELVET-HEADED OR SHEEP WAGTAIL.

The VELVET-HEADED OR SHEEP WAGTAIL (*Budytes melanocephalus*) is of a rich black upon the brow, top of the head, and region of the eye; the entire mantle is olive-colour, shaded with green; the under side is bright sulphur-yellow; the wings and centre tail-feathers are black, with light edges; and the wing-covers brownish black, bordered with white. The female is of an olive-green above and pale greyish yellow on the under side; the region of the ear is black. A remarkable variety inhabiting Great Britain is yellowish green on the top of the head and nape, but the rest of its plumage resembles that of the above-mentioned species. Both birds are from six to six and a half inches long, and from nine to ten broad; the wing measures from two inches and five-sixths to three inches and a quarter, and the tail two inches.

The Sheep Wagtails appear in Europe about May, and leave again in August or September. During the breeding season they usually frequent marshy districts, and the immediate vicinity of water, but at other times pass almost the entire day in pasture lands, near flocks of sheep or herds of cattle. Most members of this family breed in Greece and North Africa, but some few in the northern parts of Europe. The flight of all is light, and often remarkably rapid; they generally hover before alighting, or sink suddenly and directly earthward, with wings completely closed. Their song consists of a few insignificant piping notes. Although of a social temperament, they display during the breeding season a most quarrelsome and pugnacious disposition, pursuing and giving battle to every small bird that ventures to approach their dwelling-place. The nest is concealed among grass, corn, or water plants, and is usually made in a slight hollow in the ground; in form it resembles that of a Lark or Pipit; the walls are loosely constructed with fine roots, grass, dry leaves, and moss, and the interior lined with wool, horsehair, and feathers. The eggs, from four to six in number, have delicate shells, of a yellowish, reddish, or greyish hue, veined, spotted, and clouded with brown, yellow, violet, and grey. But one brood is produced in the year; the female alone undertakes the duty of incubation, and hatches the nestlings in about three days. Both parents exhibit the utmost anxiety about the safety of their little ones, and frequently betray their retreat by the cries of alarm which they utter on the approach of a stranger. Young and old remain together until they start forth on their winter excursions.

Jerdon is of opinion that from the description of *B. melanocephalus* of Southern Europe, there is little doubt that it is identical with the Indian bird, which thus appears also to inhabit Northern Africa, South-eastern Europe, and Western Africa. "In India this Wagtail comes in towards the end of September, and does not quit the north of India till the end of April or beginning of May. It is exceedingly abundant in every part of India, usually assembling in considerable flocks and feeding among cattle, picking up the insects disturbed by their feet while grazing. These birds also frequent damp meadow ground near rivers or tanks, grain fields, where they may be often put up with the so-called Ortolan (*Calandrella brachydactyla*) during the heat of the day, and, late in the season, they may always be seen taking advantage of any shade—a tree, stone, small clump or paling, to shelter them from the mid-day heat. Now and then a few may be seen about houses in gardens and roads, occasionally even perching on a housetop or paling, but very rarely on trees. Many are snared at Calcutta and elsewhere to be served up as Ortolan."

According to our own observations by far the greater number of these Wagtails pass the winter in Central Africa, and we have also seen them constantly in Egypt at that season, wandering about the pastures with the cattle, and even accompanying them to their drinking-places.

THE YELLOW-HEADED WAGTAIL.

The YELLOW-HEADED WAGTAIL (*Budytes citreolus*), a native of Central Asia, is somewhat larger than the species above described. Its length is seven inches, its breadth ten and a half, the wing measures three inches and a half, and the tail three inches and one-third. The summer plumage of the male is of a bright citron-yellow on the head and entire under side; the nape and upper portion of the back are black, the centre of the back slate-grey, and the rump brownish black. The small feathers on the wing-covers are greyish brown, broadly edged with dark grey, the centre and large feathers are margined with broad white borders, which alone are visible; the primaries and lower secondaries have narrow white edges, and the upper secondaries a broad white border to the outer web; the eight central tail-feathers are brownish black, and those at the exterior almost entirely white. The eye is brown, the beak and feet black. The female, who is not so large as her mate, is yellow on the brow, and greyish green on the top of the head and nape; the back is dark grey, the rump deep slate-colour; the cheeks and under side are of paler yellow than in the male, and the white lines on the wings narrower and more clearly defined. The young are grey above, and white shaded with yellow on the under side. Radde informs us that some few of these birds are met with in the central parts of Western Siberia, and that further east they become very numerous. According to Jerdon they are found throughout India during the winter, and there, as elsewhere, frequent marsh-land or the immediate vicinity of water.

"This species," says Jerdon, "is remarkable for the great length of the hind claw. It is found all over India in the cold weather, being migratory, and probably breeding in North-eastern Europe and Northern Asia. It is not very abundant, and is never found in dry places, like the Indian Field Wagtail, but on the banks of lakes or rivers, and more particularly in swampy ground or in inundated rice-fields, apparently affecting concealment more than others of this group. It has been obtained in breeding plumage at Mussooree, and is then a very beautiful bird."

THE GOMARITA, OR GARDEN WAGTAIL.

The GOMARITA, or GARDEN WAGTAIL (*Nemoricola Indica*), has been separated from the bird above described on account of the shortness of the claw on the hinder toe, and the peculiar coloration of its plumage. The upper part of the body is greenish brown, the under side yellowish white; a double band of black passes over the breast, and a white stripe above the eye; the blackish wings are decorated with two white lines, and a third stripe passes across the base of the primary quills; the centre tail-feather is brown, the next in succession are blackish, and those at the exterior white, but blackish at the root, and edged with brown on the outer web. The eye is brown, the upper mandible pale black, the lower mandible whitish; the foot is light yellow, shaded with purplish brown. This bird is six inches and a half long, and ten broad; the wing measures three inches and one-eighth, and the tail two inches and five-eighths.

The Garden Wagtails are found throughout India, Ceylon, China, and Japan; according to Jerdon they are comparatively rarely seen in Southern and Central India, but are very numerous on some of the surrounding islands. Everywhere they frequent woods, forests, shady gardens, and plantations, living in solitude except during the breeding season, after which they remain for some time assembled in small parties or families. These birds do not migrate, and they moult their feathers but once in the year. Layard tells us that the Gomarita, or "Dung Spreader," as this species is called in Ceylon, receives its name from its habit of seeking for insects in the droppings from the cattle.

"The Black-breasted Wagtail," writes Jerdon, "is found throughout the whole peninsula of India and Ceylon, but is common nowhere; it is indeed rare in the southern provinces and in the

bare table-land of Central India, and is not recorded from the North-western Provinces nor the Himalayas. It extends to Arracan, Burmah, Malacca, and some of the Malayan islands, where it is much more common than in continental India. I have only procured it myself in my own garden and on the Malabar coast. It appears not uncommonly about Calcutta, and, according to Blyth, at all seasons. It is quite a wood-loving species, never being found in the open plains, nor, that I have seen, about rivers, being chiefly found in shady gardens and orchards, and in roads in the forests. It is usually solitary, and feeds on various insects. It has no seasonal change of colouring, and appears to be found, at all events in the more northern parts of India, all the year round."

The SWALLOW WAGTAILS (*Enicurus*) are large and powerfully-built birds, inhabiting India and the Malay Islands; they are easily distinguished from their European congeners, by their comparatively strong beak, more rounded wing, in which the secondary quills are not prolonged, and their robust feet. The beak is of moderate size, strong, straight, broad at its base, furnished with a keel at its culmen, and gently curved at its extremity, which is slightly incised; the toes are armed with very hooked claws, the fourth and fifth, sometimes the fifth and sixth, exceed the rest in length. The extremity of the tail is so deeply forked that the centre feather is not more than one-third as long as those at the exterior.

All the species of Swallow Wagtails with which we are acquainted inhabit mountain regions, and are numerous met with in their favourite resorts among the rocks. They are always found in the vicinity of streamlets or waterfalls, into which they frequently wade. In their habits they resemble other members of their family, and, except after the breeding season, live alone or in pairs.

THE MENINTING.

The MENINTING (*Enicurus Leschenhaulti*, or *Enicurus coronatus*) is black upon the upper part of the body, neck, and breast, and white upon the crest and under side; the black wings are decorated with a broad white stripe, the outer tail-feathers are pure white, the rest black, broadly tipped with white; the beak is black, and the foot yellow. The length of the body is about ten or eleven inches. The Meninting is an inhabitant of the Malay Islands, where it frequents the mountain regions, and is usually met with near shallow lakes or streams, at an elevation of from sixteen hundred to four thousand feet above the sea. Bernstein tells us that he saw one of these birds on the Pangerango, at an altitude of ten thousand feet, but this must be regarded as a very unusual occurrence. In disposition this species is gentle and timid, but, if unmolested, will allow a stranger to approach without testifying any alarm, merely flitting a few paces farther off should the intruder come too near the spot on which it is perched. When excited the Meninting raises its crest, repeatedly jerks its closed tail upwards, and then, spreading it like a fan, slowly lowers it. Its voice resembles that of the White Wagtail. The nest, which is invariably placed upon the ground at no great distance from water, is frequently made in a small hollow in the earth, this being lined with moss, upon which a layer of half-decayed leaves is arranged to form an elastic bed for the young family. The eggs are of a dull greenish or yellowish white, thickly marked with faint red, yellow, or light brown spots; these often form a wreath at the broad end. We have never found more than two eggs in a nest. The young are tended with great devotion by their parents, who, should danger be at hand, frequently betray the presence of their brood by uttering a gentle, long-sustained note of distress. The Meninting subsists upon worms and insects, seeking its food amongst the plants that border its favourite streams. It is very partial to water, and frequently wades therein when pursuing its prey.

The ACCENTORS (*Accentores*) may be regarded as forming the connecting link between the

true Singing Birds and the strong-beaked granivorous races, more especially the Larks. They are recognisable by their powerful body, moderate-sized or long wing, in which the third or fourth quill exceeds the rest in length, as also by their short, broad tail, strong foot, armed with powerful toes, and much-curved claws. The conical awl-shaped beak turns inwards at its margins, and the nostrils are covered with a skin; the plumage is lax, and formed of feathers of a relatively large size; the



THE MENINTING (*Enicurus coronatus*).

sexes are alike in appearance, but the coloration of the young differs considerably from that of the adult birds. Only two species of Accentors can properly be regarded as European, the rest inhabit Asia, and are generally seen hopping over the ground or flying very low, in search of the insects, berries, or delicate seeds upon which they subsist; they never frequent lofty trees, or even tall shrubs, except during the breeding season, when the males occasionally perch upon low branches, whilst pouring out their, in most cases, very agreeable song. As winter approaches some species wander southward, while others merely quit the bleakest and most exposed peaks for their rocky fastnesses. Incubation takes place early in the spring, and two broods are generally produced in the course of the summer. Their nests are carefully and neatly built of moss and hay, and lined with some soft and elastic materials. The eggs, from three to six in number, are of greenish hue.

The HEDGE SPARROWS, or HEDGE WARBLERS (*Tharraleus*, or *Accentor*), have a slender body, a comparatively weak and pointed beak, short, rounded wings, in which the fourth quill is the longest, a moderate-sized tail, straight or incised at its extremity, and a high foot.

THE HEDGE SPARROW, OR HEDGE WARBLER.

The TRUE HEDGE SPARROW, or HEDGE WARBLER (*Tharraleus modularis*, or *Accentor modularis*), is six inches long and eight inches and one-sixth broad, the wing measures two inches and three-quarters, and the tail two inches and one-quarter. The female is considerably smaller than her mate. The plumage of the adult bird is of a dusky reddish brown, spotted with a still deeper shade on the shoulder and upper part of the back; the head, fore part of the throat, and breast are brownish grey, or slate-colour. In autumn the feathers on these parts have light edges; the belly is brownish yellow, darkly spotted, and the rump greyish brown; the outer web of the quills is reddish brown, striped once, in some instances twice, with a whitish hue; the tail is of an uniform greyish brown. The eye is light brown, the beak brown, and the foot reddish. The young are reddish yellow spotted with blackish brown on the mantle, and of a whitish hue spotted with greyish black on the centre of the belly. The Hedge Sparrow inhabits the whole of Europe, from sixty-four degrees north latitude as far south as the Pyrenees, Alps, and Balkan Mountains; it is only occasionally seen still farther north, but visits Southern Europe, Northern Africa, and Western Asia, regularly during its migrations. In Great Britain it remains throughout the entire year. For some time after their return to their native lands the Hedge Sparrows resort to the open country, and take up their quarters on bushes and hedges; previous to the breeding season, however, they retire to the shelter of their favourite fir or pine woods, or, though comparatively rarely, occupy groves of leafy trees; they also exhibit a decided preference for mountainous regions.

In Great Britain this brisk little bird is a common frequenter of gardens, orchards, or hedgerows, where it hops nimbly and almost incessantly from twig to twig, in search of the insects, larvæ, and seeds upon which it mainly subsists. According to Mr. Yarrell, it seldom or never touches fruit. During the winter it is a constant visitor to our farmyards and houses, and when the weather is severe is frequently reduced to seek a scanty supply of food from drains and gutters. All the movements of the Hedge Warbler are equally agile and rapid; it hops with the utmost alacrity over the surface of the ground, climbs and scrambles amid the thickest bushes with wonderful agility, and flies lightly and gracefully, not merely from bush to bush, but sometimes high into the air. Whilst in pursuit of food it usually prefers to keep within the shelter of the foliage, but when about to utter its short, sweet, and somewhat plaintive song, it perches upon a projecting branch at a considerable elevation, and, if alarmed, darts directly downwards into the innermost recesses of the brushwood or shrubs beneath. Mudie describes the voice of the Hedge Sparrow as being particularly plaintive in tone during the winter months, and remarks that in severe seasons it utters its peevish cry with an apparent feeling of suffering and desolation. The song of the males is often heard as early as January; and by the middle of February each has found a mate and retired to some quiet spot, in order to commence building operations. The nest, which is generally finished by the end of March, is loosely put together; it is formed exteriorly of moss and fibres, and within is neatly and carefully lined with interwoven horsehair and wool; both parents assist in the labour of building, and have generally completed their snug little abode by the middle of March: it is, however, exposed to danger and observation, being placed in a bush or hedge, without, as yet, the screen of leaves, and often is visited by the Cuckoo, with the view of depositing her progeny. The eggs, from four to six in number, are of a bluish green colour. The first brood is hatched in April, and a second is produced later in the season. Should the eggs be stolen from the nest, as is too frequently the case, the

female will occasionally furnish a third brood. The young are hatched in about a fortnight, both father and mother sharing the tedium of incubation, and tending them with the utmost care and devotion until they are strong enough to seek their own food.

THE SIBERIAN ACCENTOR.

The SIBERIAN ACCENTOR (*Tharraleus montanellus*) is blackish brown upon the top of the head, bridles, and region of the eye; a broad yellowish white stripe passes over the eyebrow, and almost encircles the head; the nape is grey, and the back reddish brown, spotted with a deeper shade; the throat and lower tail-covers are whitish; the region of the crop and the upper part of the breast are deeply shaded with reddish yellow, and marked with crescent-shaped black spots; the sides of the breast are shaded with reddish yellow and reddish brown. The eye is pale yellowish brown, the mandibles greyish black, the lower one lightest at the base, the foot is of a dirty yellowish white. This species is from four inches and two-thirds to five inches and one-third long; the wing measures two inches and seven lines, and the tail about two inches and six lines. This beautiful bird inhabits Siberia, and has been found in Hungary, Dalmatia, and Italy.

THE ALPINE ACCENTOR.

The ALPINE ACCENTOR (*Accentor Alpinus*) represents a group of birds in appearance very closely resembling the Larks. Their beak is slightly curved and pointed, compressed at its sides, narrow towards its extremity, and broader than it is high at the base; the legs are stout, the toes thick, and the claws much hooked, but blunt; the wings, in which the third quill exceeds the rest in length, are long; the tail is short, and deeply incised; the upper portion of the body is deep grey, spotted with brown, the under side ash-grey, marked at the sides with reddish brown; the throat is white, slightly spotted with brown; the quills and tail-feathers are blackish brown, the latter spotted with white; the wings are ornamented with two white lines. Both sexes are alike in colour. The young are grey, spotted with reddish yellow; black on the back, and reddish yellow, chequered with light and dark grey, on the under side; the wing-feathers are brown, edged with rust-red, and the wings enlivened by two reddish yellow stripes. The tail is brown, and also tipped with reddish yellow; the eye is light brown, the beak yellow at the base and black at the tip; the foot is brown. This species is seven inches long and eleven and three-quarters broad; the wing measures three inches and three-quarters, and the tail two inches and three-quarters; the female is half an inch shorter, and three-quarters of an inch narrower than her mate.

These birds inhabit all the lofty mountains of Central and Southern Europe and Southern Asia, and are particularly numerous upon the Alps, where they are generally met with at an altitude of from 4,000 to 6,000 feet above the sea. They are also occasional visitors to the south of Great Britain. In winter they usually descend to the plains and valleys in search of seeds, but return to their favourite haunts as soon as the snow has melted from the surface of the rocks; they are then to be seen running lightly or flying from one peak to another, as they pour out their clear, melodious song, many notes of which will bear comparison with those of the Lark itself. Their disposition appears to be somewhat capricious; at one time they are all life and activity, at another perfectly quiescent. Gloger explains this peculiarity by telling us that they are only brisk and lively while searching for food, and that their change of demeanour is attributable to the process of digestion that is being carried on as they sit erect and motionless often for a whole half hour at a time. While hopping on the ground the Alpine Accentor carries its tail slightly elevated, sometimes so high as to be raised above the wings. The flight of these birds is light and rapid, and capable of being sustained for a very considerable distance; but, under ordinary circumstances, they keep near the ground, and only

soar into the air during the breeding season. Towards man they exhibit the utmost confidence, and are frequently to be seen hopping about close to a party of mountaineers or group of shepherds, quite indifferent to and apparently almost unconscious of the voices and movements around them. Insects, spiders, seeds, and berries constitute their principal food, and they devour grass seed, in particular, in great quantities. The nest, according to Schinz, is commenced early in the spring, and is situated in



THE ALPINE ACCENTOR (*Accentor Alpinus*).

clefts or holes of the rock, or amid Alpine rose bushes; sometimes on the roofs of houses, care being generally taken that the little structure is so placed as to be completely sheltered from wind and weather. The nest, which is circular and semi-conical, is three inches both in diameter and in depth; it is constructed alternately of grass and moss, and lined with wool, hair, or similar materials. The eggs, from four to five in number, are of an oval shape, smooth, and of a blueish green. It is at present undecided whether the female is assisted by her mate in the work of incubation. Two broods are produced in the year, the first in May, the second in July.

The TITS (*Parus*), although differing in many respects, resemble each other in most essential particulars. All are of small size, with compact bodies and short limbs. The beak is conical,



THE RED-BELLIED BLACKBIRD

Agelaius phoeniceus

Illustrated by J. J. Audubon

straight, and short, with sharp margins, compressed at its sides and pointed at its tip; the feet are sturdy, the toes powerful and of moderate size, and the claws comparatively large and very much hooked. The wings, in which the fourth or fifth quill is the longest, are short and rounded; the tail short, and either straight or very slightly incised at its extremity; occasionally it is very long, and graduated at its sides. The plumage, which is thick, and composed of long and lax feathers, is bright and elegant in its coloration.

Most members of this family inhabit the northern parts of the Eastern Hemisphere, some few belong to North America, and others are natives of Asia and Africa. Opinions differ as to whether they migrate at the approach of winter, but our own observations have convinced us that even those frequenting northern countries never wander to any great distance from their native haunts. All are social in their habits, and consort not only with their own kind, but also seek the company of other species, often remaining in their society for weeks at a time. They seldom visit seed-growing districts, but frequent woods and forests, living almost exclusively upon trees or large shrubs, climbing and flying about the branches in what may literally be termed an incessant search for food. On the ground their movements are clumsy, and they seldom undertake long excursions, but generally only flit from one tree to another, feeding principally upon insects and seeds; of the former they devour enormous quantities, as their life of restless activity renders an unusually large supply of nourishment indispensable. The Tits may, therefore, be regarded as valuable assistants to the gardener and farmer, richly meriting their favour and protection. Most species breed twice in the year, laying each time from seven to twelve eggs.

The CRESTED WRENS or KINGLETS (*Regulus*) are recognisable by their straight, thin, finely-pointed beak, which is broad at the base, raised at the culmen, and slightly notched at the curved tip of the upper mandible. The feet are slender, the tarsi high, and the claws very decidedly hooked; the wings, in which the fourth and fifth quills are the longest, are short, broad, and much rounded; the tail is of medium size, and incised at its extremity; the plumage is thick, and composed of large, loose feathers; the nostrils are covered with small feathers, and the corners of the mouth with a few bristle-like hairs; the feathers on the crown of the head are generally prolonged into a crest, and are of brilliant hue. These birds are met with throughout Europe, Asia, and North America, and from time to time make their appearance in North-western Africa.

Their journeys are extraordinary when compared with their strength, size, and powers of flight, but they are often exhausted before arriving at their destination. Mr. Selby has related the following account of a large migration on the coast of Northumberland in 1822:—

“On the 24th and 25th of October, 1822, after a very severe gale, with thick fog from the north-east (but veering, towards its conclusion, to the east and south-east), thousands of these birds were seen to arrive upon the sea-shore and sand-banks of the Northumbrian coast, many of them so fatigued by the length of their journey, or perhaps by the unfavourable shift of wind, as to be unable to rise again from the ground, and great numbers were in consequence caught or destroyed. This flight must have been immensely numerous, as its extent was traced through the whole length of the coasts of Northumberland and Durham. There appears little doubt of this having been a migration from the more northern provinces of Europe (probably furnished by the pine forests of Norway, Sweden, &c.), from the circumstance of its arrival being simultaneous with that of large flights of the Woodcock, Fieldfare, and Redwing. Although I had never before witnessed the actual arrival of the Golden-crested *Regulus*, I had long felt convinced, from the great and sudden increase of the species during the autumnal and hyemal months, that our indigenous birds must be augmented by a body of strangers, who make these shores their winter resort.”

THE GOLDEN-CRESTED WREN.

The GOLDEN-CRESTED WREN (*Regulus cristatus*, *flavicapillus*, or *auricapillus*) is yellowish green on the mantle, and light grey beneath; the throat is whitish grey; the crown of the head is saffron yellow, its sides golden yellow, decorated with a black stripe; the wings are enlivened by two light-coloured bands. In the plumage of the female all the tints are duller, and the yellow on the head paler than in her mate. The young are entirely without the bright colouring on the head. This species is three inches and two-thirds long, and five inches and five-sixths broad. The wing measures one inch and five-sixths, and the tail an inch and a half. The Golden-crested Wren is the only member of this family found in Scandinavia, and it also breeds as far south in Europe as Greece, but is seldom seen in Spain. Notwithstanding the apparent delicacy of these birds, they are capable of sustaining an unusual degree of cold, and great numbers pass the entire winter in the pine forests of Sweden. In England and Ireland they also remain throughout the whole year, but we are told that those living in the Orkneys wander as far as the Shetland Isles when the cold sets in. A most extraordinary circumstance that took place in 1823 is related in the Memoranda of the Wernerian Society, namely, the total disappearance of the whole race of these birds, natives as well as strangers, throughout Scotland and the north of England. This happened towards the end of January, a few days previous to the continued snowstorm that was felt so severely in the northern counties of England and the eastern parts of Scotland. The range and route of this migration are unascertainable, but it was most probably a distant one, from the fact of not a pair having returned to breed or pass the succeeding summer in the situations they had been known always to frequent; nor was one of this species to be seen till the following October, about the usual time for our receiving an annual accession of strangers to our indigenous birds. Like their congeners, these tiny, delicate Wrens principally frequent fir and pine forests, about the branches of which they scramble with wonderful agility, hanging head downwards from the twigs, or darting like meteors from branch to branch, in a restless and incessant search for the insects upon which they subsist. Their voice is gentle and twittering, and their song occasionally uttered as they hover in the air over a bush or shrub. During the period of incubation, which frequently commences as early as February, the males endeavour to attract the attention of their future partners by spreading the beautiful crest upon their heads, and indulging in a variety of animated and excited movements, as they hop or fly about the spot where the desired mate is perching. The nest is spherical, usually placed at the extremity of a branch, beautifully constructed of moss or lichen, and in most instances snugly lined with feathers, cotton wool, or down from plants. The eggs, from six to ten in number, have a pale reddish white or yellowish white shell, finely spotted with red, and are scarcely larger than peas, not exceeding six lines in length, and five in diameter. So voracious are the young, that Colonel Montague observed the mother come thirty-six times in an hour with morsels for her craving family, and continue her labours without intermission for sixteen hours in the day. Mr. Selby tells us that he has seen fully-fledged young by the end of April.

THE DALMATIAN WREN.

The DALMATIAN WREN (*Regulus modestus*).—"The only history of this bird," says Mr. Gould, "that we have been able to collect was that written on the label attached to it by the Baron de Feldegg, of Frankfort, which is as follows:—'I shot this bird, which on dissection proved to be a male, in Dalmatia, in the year 1829.' We were informed, at the same time, that it was not known to any German ornithologists, and, consequently, had not received a specific title. This we have ventured to give, and suggest the term *modestus*, in allusion to its chaste plumage and the absence of

the crest, which forms so conspicuous a feature in other species of this genus. Its most conspicuous characters are the three yellow stripes which ornament the head; the brighter and most highly coloured of these marks, contrary to what obtains in any other *Reguli*, being that over each eye, while the coronal stripe is palest, and consists of feathers similar in length to those which cover the rest of the head. With the exception of the stripes on the head, the whole of the upper surface is delicate olive green, becoming abruptly paler on the rump; the quills and tail are brown, edged with pale yellow, which is more conspicuous on the secondaries; two transverse bands of the same colour cross the shoulders. The whole of the under surface is pale greenish white; bill and tarsi brown."

THE FIRE-CRESTED WREN.

The FIRE-CRESTED WREN (*Regulus ignicapillus*, or *Regulus pyrocephalus*) is readily distinguished from the bird above described by a black stripe that passes across and a white stripe that passes over the eyes. The crown of the head is fiery red, and bright-flame yellow at its sides, surrounded by a black line, which is broader than that on the Golden-crested Wren. The two species are almost alike in size. The Fire-crested Wren is met with in France, Germany, Italy, Greece, and Spain, and has been seen, although very rarely, in England. In most of the above-mentioned countries it only appears during its wanderings, but is known to breed in Greece. Such of these birds as inhabit Europe closely resemble the species above described in their movements and habits.

According to Jerdon, "the Himalayan Fire Crest is very like the *Regulus ignicapillus* of Europe, but is larger, and has the flame-coloured crest more developed. The Himalayan Fire-crested Wren has only been found in the North-western Himalayas, and even there, apparently, it is not very common."

THE SATRAP WREN.

The SATRAP-CROWNED WREN (*Regulus satrapa*), a North American species nearly resembling its European congeners, is brownish grey upon the back, and greyish white upon the under side; the breast is shaded with brownish yellow, the eyes are encircled by a greyish white ring, and the head decorated on each side with a black band, edged with bright yellow, and with a broad fiery red stripe across the crown; the quills and feathers of the wing-covers are dusky, the former edged and the latter tipped with greenish yellow; the eye is brown, the beak black, and the feet brownish yellow. The bird is four inches long and seven broad.

Of the American Fire-crested Wren, or Fiery-crowned Knight, Nuttall writes as follows:—"The *Regulus tricolor* (or *Regulus satrapa*) appears associated only in pairs, which are seen on their southern route, in this part of Massachusetts, a few days in October, and about the middle of the month, or a little earlier or later according to the setting in of the season, as they appear to fly before the desolating storms of the northern regions, whither they retire about May to breed. Some of these birds remain in Pennsylvania until December or January; proceeding, probably, but little further south during the winter. They are not known to reside in any part of New England, but retire to the same remote and desolate limits of the farther north with an allied species, of which they have most of the habits. They are actively engaged during their transient visits to the south in gleaning up insects and their lurking larvæ, for which they perambulate the branches of trees of various kinds, frequenting gardens and orchards, and skipping and vaulting from the twigs, sometimes head downwards, like the Chickadee, with whom they often keep company, making only now and then a feeble chirp. They appear at this time to search chiefly after spiders and dormant concealed coleopterous or other insects; they are also said to feed on small berries and some kinds of seeds, which they break open by pecking with the bill in the manner of the Titmouse. They likewise frequent the sheltered cedar and pine woods, in which they probably take up their roost at night. Early in April

they are seen on their return to the north in Pennsylvania. At this time they dart among the blossoms of the maple and elm, in company with others of their race, and appear more volatile and actively engaged in seizing small flies on the wing, and collecting minute lurking caterpillars from the opening leaves. On the 21st of May, 1835, I observed this species feeding its full-fledged young in a tall pine tree on the banks of the Columbia river."

"If we compare the American Golden-crest Wren with the European, we find that they agree in general appearance, in the proportional length of the quills and in the form of the tail, as well as in that of the bill and legs. Their differences are the following:—

"*Regulus tricolor* is longer by half an inch than *Regulus cristatus*, its bill is stronger and one-



THE GOLDEN-CRESTED WREN (*Regulus flavigapillus*).

twelfth of an inch shorter, its claws are also stronger and shorter, and the flame-coloured patch on the head is more extended and brighter. The European species never has so much grey on the neck and back, and its lower parts are always more tinged with brownish yellow. The other differences are not very obvious; but the difference in the size of the bill, were there no other characteristics, would be enough, in a family of birds so closely resembling each other as the *Reguli*, to point out the American as distinct from the European species.

"On the 23rd of January," continues the same writer, "I saw great numbers of these birds in the woods near Charlestown, searching for food high in the trees as well as low down, and so careless of us, that, although we would approach within a few feet of them, they were not in the least disconcerted. Their feeble chirp was constantly repeated. We killed a great number of them, in hopes of finding among them some individuals of the species known under the name of *Regulus ignicapillus*, but in this we did not succeed. At times they uttered a strong querulous note, somewhat resembling that of the Black-headed Titmouse. The young had acquired their full plumage, but the females

were more abundant than the males. At this season the yellow spot on their head is less conspicuous than towards spring, when they raise their crest-feathers while courting. The young, shot in Newfoundland, in August, had this part of the head of a uniform tint with that of the body. With us they are amazingly fat, but at Newfoundland we found them the reverse."

"The Satrap Wren," says Audubon, "breeds in Labrador, where I saw it feeding its young in August, when the species appeared already moving southward; but although it was common there and in Newfoundland, as was the Ruby-crowned Knight, we did not succeed in our search for its nest. It enters the United States late in September, and continues its journey beyond their limits, as I have met with it on the borders of our most southern districts during winter. Individuals remain in all the Southern and Western States the whole of that season, and leave them again about the beginning of March. They generally associate in groups, composed each of a whole family, and feed in company with Titmice, Nuthatches, and Brown Creepers, perambulating the tops of trees and bushes, sometimes in the very depth of the forests or of the most dismal swamps, while at other times they approach the plantations and enter the gardens and yards. Their movements are always extremely lively and playful. They follow minute insects on the wing, seize them among the leaves of the pines, or search for larvæ in the chinks of the branches. Like the Titmice, they are often seen hanging to the extremities of twigs and bunches of leaves, sometimes fluttering in the air in front of them, and are unceasingly occupied. They have no song at this season, but merely emit now and then a low *screeep*."

THE RUBY-CROWNED WREN.

The RUBY-CROWNED WREN (*Regulus calendulus*) is four inches long and six in extent of wing; the upper parts of the head, neck, and back are olive, with a considerable tinge of yellow; wings and tail dusky purplish brown, exteriorly edged with yellow olive; secondaries and first row of wing-coverts edged and tipped with white, with a spot of deep purplish brown across the secondaries, just below their coverts; the hinder part of the head is ornamented with an oblong lateral spot of vermilion, usually almost hid by the other plumage; round the eye a ring of yellowish white; whole under parts of the same tint; legs dark brown, feet and claws yellow, bill slender, straight not notched, furnished with a few black hairs at the base; inside of the mouth orange. The female differs very little in its plumage from the male, the colours being less lively, and the bird somewhat less.

"This little bird," says Wilson, "is an American species, visits us early in the spring from the south, and is generally first found among the maple blossoms about the beginning of April; these failing, it has recourse to those of the peach, apple, and other fruit trees, partly for the tops of the sweet and slender stamina of the flowers, and partly for the winged insects that hover among them. In the middle of summer I have rarely met with these birds in Pennsylvania; and as they penetrate as far north as the country round Hudson's Bay, and also breed there, it accounts for their late arrival here in fall. They then associate with the different species of Titmouse and the Golden-crested Wren, and are particularly numerous in the month of October and beginning of November, in orchards, among the decaying leaves of the apple-trees, that at that season are infested with great numbers of small, black-winged insects, among which they make a great havoc. I have often regretted the painful necessity one is under of taking the lives of such inoffensive, useful little creatures, merely to obtain a more perfect knowledge of the species, for they appear so busy, so active and unsuspecting, as to continue searching about the same twig, even after their companions have been shot down beside them. They are more remarkably so in autumn, which may be owing to the great number of young and inexperienced birds which are then among them; and frequently at this season I have stood under the tree, motionless, to observe them, while they gleaned among the

low branches, sometimes within a foot or two of my head. They are extremely adroit in catching their prey, have only at times a feeble chirp, visit the tops of the tallest trees as well as the lowest bushes, and continue generally for a considerable time among the branches of the same tree, darting about from place to place ; appearing, when on the top of a high maple, no bigger than humble-bees."

"Notwithstanding all my endeavours," continues our author, "I have never been able to discover their nest, though, from the circumstance of having found them sometimes here in summer, I am persuaded that they occasionally breed in Pennsylvania, but I know several birds no larger than this that usually breed on the extremities of the tallest trees in the woods, which I have discovered from their beginning before the leaves are out ; many others, no doubt, choose similar situations, and, should they delay building until the woods are thickened with leaves, it is no easy matter to discover them. In fall they are so extremely fat, as almost to dissolve between the fingers as you open them, owing to the great abundance of their favourite insects at that time."

The PENDULINE TITMICE (*Ægithalus*) are small, slenderly-formed birds, with awl-shaped beaks, scarcely perceptibly curved at the tip ; short, blunt wings, in which the third, fourth, and fifth quills are the longest, and nearly of equal length ; and moderate-sized tails, slightly incised at the extremity. The plumage is very lax, and the males more brightly and beautifully coloured than the females. The young differ in their appearance from both parents.

THE TRUE PENDULINE TITMOUSE.

The TRUE PENDULINE TITMOUSE (*Ægithalus pendulinus*) is greyish red on the upper part of its body, on the under side whitish, shaded with rust-red on the breast ; a black stripe, beginning at the cheeks, passes across the eyes to the region of the ear ; the quills and tail-feathers are blackish, with light borders ; the eye is brown, the beak of various shades of black, whitish at its margins ; the feet are black or greyish black. The female is more dusky, and has less black upon the brow and sides of the head than her mate. In the young the black cheek-stripes are not indicated. The upper portion of the body is reddish grey. This species is from four inches to four and a half long, and from six to six and a half broad ; the wing measures two inches and a quarter, and the tail one inch and three-quarters.

These elegant little birds inhabit all the eastern parts of Europe and a large portion of Asia, and their active, sprightly demeanour entitles them to a place among the most interesting members of the family to which they belong. From morning to night they are almost incessantly in motion, climbing nimbly among the reeds, or hopping from twig to twig, in search of the insects and larvæ upon which they subsist. They generally, however, keep well sheltered beneath the foliage, where their presence is constantly betrayed by the frequent utterance of their clear, chirping note. Whether this species migrates is as yet undecided ; it is, nevertheless, certain that it disappears from its native haunts about September or October, and does not return until March.

"Proverbial as the nests of the Tits are for beauty of structure," says Mr. Gould, "none are more remarkable and curious than that of the present species ; it is constructed of the soft down of the poplar or willow, and this substance, which closely resembles cotton wool, is woven together with admirable ingenuity, so as to form a flask-shaped nest with a lateral opening into the internal chamber. It is suspended at the extremity of a drooping branch of a willow, or any similar tree hanging over the water."

We are indebted to Baldamus not only for a very complete description of the remarkable nest made by these birds, but also for a detailed account of the mode of building it. "I have had an

opportunity," writes that naturalist, "of watching during seven weeks the daily operations of a pair of these ingenious little builders, and have carefully examined upwards of thirty nests." He observed, moreover, the whole process of their construction, and procured several in different stages of completion. The situation chosen was generally in the vicinity of a swamp, and the nests were almost invariably suspended to the innermost twigs of the branches of a willow tree, usually at an elevation of twelve or fourteen feet from the ground, although some were at a height of from twenty to thirty feet, and one example was obtained from the very summit of a high tree.

In building these admirable structures the two sexes seem to emulate each other in industry and perseverance, for without this, it is difficult to conceive how such an edifice can be completed in the short space of about fourteen days.

"The mode of proceeding in the construction of one of these nests," continues the same writer, "is as follows:—First of all the bird begins by winding a quantity of wool, goats' hair, bast, or hempen thread, around the selected twig, at a part where it becomes forked, and between the forks are laid the foundations of the walls of the nest, which thus becomes securely fixed; from this basis a sort of felt-work is prolonged into the shape of a shallow basket, in which condition it was formerly thought to be a supernumerary nest, constructed for the accommodation of the male bird. As, however, the work proceeds, the walls are still further produced by an accumulation of fitting materials, which now consist of down collected from poplar and willow trees, interwoven with threads of bast, wool, and hair, while the fibres of vegetable cotton are glued and matted together by the aid of saliva supplied by the birds themselves. The structure now presents the appearance of a basket with thick rounded walls, and the next part of the process is to construct the side entrance, which terminates in a small round hole, while the other side also has a passage from below; the one with the round opening is now provided with a tube of from one to three inches long, while the other remains open, and only felted and smoothed down at the edges; lastly, the bottom of the inside of the nest is thickly carpeted with loose unrolled vegetable wool, and the structure is at length completed. The nest now appears a round ball or bag, from six to eight inches in depth, and from four to five in width, with a round entrance like the neck of a bottle, which at first bending down soon stands out horizontally towards the entrance, which is circular, and provided with a slightly thickened margin."

"It is impossible to confound such a nest with that of any other bird, and, therefore, we are quite assured that the Bottle Tit has repeatedly made its nest in Germany, where deserted nests are frequently found in winter by men employed in clearing away the reeds in various localities."

The eggs, according to Baldamus, are usually seven in number, and have a smooth, delicate, pure white shell, which, owing to its transparency, appears pale red until it is emptied of its contents. We are told, on good authority, that both parents assist in the process of incubation. The young are reared principally upon small caterpillars, flies, and beetles.

The REED TITMICE (*Panurus*) are distinguishable by their slender body, long and much graduated tail, moderate-sized wings, in which the fourth and fifth quills exceed the rest in length, and their short, much-curved beak. The plumage is comparatively smooth and compact, but varies according to the age or sex of the bird.

THE BEARDED TITMOUSE.

The BEARDED TITMOUSE (*Panurus biarmicus*) is light cinnamon brown on the upper part of the body, greyish blue on the crown of the head, and light rose-red on the under side; the throat is whitish, the region of the tail black; the brown wings are decorated with a white stripe, and edged with a line of black. The chin of the male is covered with a beard-like tuft of soft black feathers,



BEARDED AND PENDULINE TITS.

about nine inches long. The plumage of the female is paler; the back is of a light shade, darkly spotted; the lower tail-coverts are pale rust-red, and the very slightly indicated beard white. The young are almost black upon the back. The length of this species is from six inches to six and a half, and its breadth from seven inches to seven and a half; the wing measures two inches and a half, and the tail three inches and a quarter.

The Bearded Titmouse is met with in all the north-eastern parts of Europe. In Great Britain it is but rarely seen; it is, however, comparatively numerous in Holland, South Hungary, Greece, and a portion of Asia Minor. Everywhere it seeks the reed-covered banks of rivers, and lives in pairs or in small families.

Dr. Leach was induced to separate this very interesting bird from the genus *Parus* in consequence of its differing in several minor characters from the other species of that genus, particularly in the situation it affects as a place of abode and nidification, constructing a nest on or near the ground in wet and marshy places. "Its food," continues Mr. Gould, "is also very different, consisting of the seeds of reeds, with aquatic insects and minute-shelled snails, for the trituration of which it is provided with a strong muscular gizzard. It is more particularly abundant in the low and marshy districts of Holland, France, and Germany. Its disposition is timid, and its manners shy and retired, dwelling in situations both local and difficult of access, a circumstance which, until lately, has prevented naturalists from giving any details, especially of its peculiar habits." We are indebted to Mr. Hoy for the best account of this bird yet published, as given in the "Magazine of Natural History," (Vol. III., page 328), from which the following is extracted:—

"The borders," says Mr. Hoy, "of the large pieces of water in Norfolk, called 'broads,' particularly Hickling and Horsey Broads, are the favourite places of resort of these birds; indeed, it is met with in that neighbourhood wherever there are reeds in any quantity, with fenny land adjoining. During the autumn and winter they are found dispersed generally in small parties throughout the whole length of the Suffolk coast, wherever there are large tracts of reeds. I have found them numerous in the breeding season on the skirts of Whittlesea, near Huntingdonshire, and they are not uncommon in the fenny districts of Lincolnshire; whether they are to be met with further north I have no means of ascertaining, but they do not appear to have been noticed north of the Humber. They begin building in the end of April. The nest is composed on the outside of the dead leaves of the reed and sedge, intermixed with a few pieces of grass, and invariably lined with the top of the reed, somewhat in the manner of the nest of the Reed Wren (*S. arundinacea*), but not so compact in the interior. It is generally placed in a tuft of coarse grass or rushes, near the ground, on the margin of the dykes in the fen; sometimes fixed among the reeds that are broken down, but never suspended between the stems. The eggs vary in number from four to six, rarely seven; they are pure white, sprinkled all over with small purplish red spots, intermixed with a few small faint lines and markings of the same colour—size about the same as that of the Greater Tit, but much more rounded and shorter. Their food during winter is principally the seed of the reeds, and so intent are they in searching for it, that I have taken them with a bird-lime twig attached to the end of a fishing-rod. When alarmed by any sudden noise, or the passing of a hawk, they utter their shrill musical notes, and conceal themselves among the thick bottom of the reeds, but soon resume their station, climbing the upright stems with the greatest facility. Their manners in feeding approach near to those of the Long-tailed Tit; they often hang with the head downwards, and occasionally assume the most beautiful attitudes. Their food is not entirely reed-seed, for they sometimes eat insects and their larvæ, and the very young shelled snails of different kinds, which are numerous in the bottom of the reedlings. I have been enabled to watch their motions whilst in search of insects, having, when there is a little wind stirring, been often within a few feet of them, quite unnoticed

among the thick reeds. Were it not for their note betraying them, they would be seldom seen. The young, until their autumnal moult, vary in plumage from the old birds; a stripe of blackish feathers extends from the hind part of the neck to the rump. It has been said that the males and females keep separate during the winter, but I have always observed them in company; they appear to keep in families until the pairing time, in the manner of the Long-tailed Tit, differing in this respect, that you will occasionally find them congregated in large flocks, more particularly during the month of October, when they are migrating from their breeding-places." "To the above interesting account," says Mr. Gould, "we may add that they are to be met with occasionally on the banks of the Thames; from the thick reed-beds of Erith, in Kent, throughout the course of the river to Oxford; but their visits are by no means regular, or to be calculated on with accuracy."

A contributor to Mr. Loudon's magazine saw a flock of eight or ten of these beautiful little creatures on the wing, in a large piece of reeds near Barking Creek, Essex. "They were just topping the reeds in their flight, and uttering in full chorus their sweetly musical note, which may be compared to the sound of very small cymbals; it is clear and ringing, though soft, and corresponds well with the delicacy and beauty of the form and colour of the birds. Several flocks were seen during the same morning. Their flight was short and low, only sufficient to clear the reeds, on the seedy tops of which, like most of their tribe, they alighted to feed, with the head or back downwards. If disturbed, they immediately descend by running, or, rather, by dropping to the bottom of the stem, where they creep and flit, perfectly concealed from view by the closeness of the covert and the resembling tints of their plumage."

The LONG-TAILED TITS (*Orites*) have a short, compact body; long, graduated tail, incised at the centre of its extremity; moderate-sized wings, in which the fourth and fifth quills exceed the rest in length; a very short, much arched, and pointed beak; and delicate feet. The sexes are alike in colour, and the young differ but slightly from their parents.

THE LONG-TAILED TITMOUSE.

The LONG-TAILED TITMOUSE (*Orites caudatus*) is black on the centre of the back and white on the head; the under side is reddish white, and the wings black, their hinder quills being broadly bordered with white; the tail is black, the three outer feathers spotted with white. The young are pale black on the side of the head, back, and wings, and of a whitish hue on the top of the head and on the under side of the body. The eye is dark brown in the adults, its unfeathered margin is light red, in the young bright yellow. The beak and feet are black. This species is six inches long and seven inches and three-quarters broad; the wing measures two inches and a half, and the tail three inches and a half.

The Long-tailed Tit inhabits the whole of Europe, from its most northern countries as far south as the Pyrenees and Alps, but is met with comparatively rarely in Greece and Spain. Like some of its congeners, it prefers taking up its abode on fir and pine trees, but, if these are not attainable, usually frequents orchards or well-cultivated woodland districts; its habits are social, and its disposition, though equally lively and active, considerably more peaceful than that of most other members of its family. Both sexes utter a brisk chirping note, and the male at some seasons a faint twittering song. These birds destroy the smallest kinds of insects in enormous quantities, and thus render inestimable service to the farmer and gardener.

"The nest of this species," says Mudie, "has always been admired as a model of neatness and warmth. It is formed by patient and incessant labours of both birds for at least a month, if materials are abundant, and five or six weeks when the supply is more scanty. It is placed in the fork of a

small mossy tree, or among the thick twigs of a shrub, often a hawthorn, sometimes an evergreen, seldom more than three or four feet from the ground, and generally within cover of the sprays. Its form resembles that of an egg placed on the broader end ; in appearance and texture it is very like a short decayed stump, that has been coated over with lichens, and is as firm in texture as it is neat and regular in form. The main fabric is closely made of moss, taken in very small pieces, and matted together with animal fibre, rarely with wool—as the bird does not range so far from the bushes as to be much of a wool-gatherer—but principally with what may be called tree or bark silk, that is, the silken cocoons that cover the chrysalides of insects and the eggs of spiders. These materials are firmly interwoven, but, though the term is sometimes applied to them, they are not *felted*. The two materials form a stronger fabric than could be made of either of them singly. The moss gives bulk and stiffness, and the silky filaments cohesion ; and, as the birds are microscopic in their vision, they have perfect command over their short bills, and apply these materials by very small portions at a time. The fabric is beautifully put together, and when there are twigs in the way the nest is so closely worked upon them that it cannot be removed entire unless they are taken along with it. Externally it is coated with lichens and liverworts, so closely worked in that not a bit falls off ; the inside is carefully lined with feathers, the quills of which are worked into the fabric. The whole nest, dome and all, is lined in this manner, so that when finished it is secure against rain and change of temperature. The entrance is by an aperture in the side, towards the top of the structure, and there are in some instances two apertures, the one nearly opposite to the other, the feathers around which are so worked into the fabric as, when not pushed aside by the birds, to form a sort of curtain. The interior is usually of sufficient size to contain both birds during the night, and, in the case of there being two apertures, they sit with the head of the male out at the one and the tail of the female out at the other, so that both apertures are partially closed, and the male is ready to start out as soon as there is light enough for hunting.” The first brood is produced by the end of April, and usually consists of from nine to twelve or occasionally fifteen eggs ; these are very small, with delicate white shells, more or less spotted with pale red ; many females lay eggs that are quite white. The young are hatched thirteen days after their birth, and during all that time the brooding mother must suffer considerable annoyance from the unwieldy size of her tail, which is generally kept twisted round in the most inconvenient manner : nor are the young more at their ease ; at first, despite their numbers, they manage tolerably well, but as they increase in size each struggles for the warmest place, and pushes at his neighbour until the nest gives way, or is rent in such a manner that the troublesome tail can be thrust out and freer space obtained.

THE CRESTED TITS (*Lophophanes*) are distinguished by comparatively slender beaks and the pointed upright crest that adorns the head. India and America have species similar to those we are about to describe.

THE CRESTED TIT.

THE CRESTED TIT (*Lophophanes cristatus*) is mouse-coloured on the upper portion of the body, and greyish white on the under side ; the slender graduated feathers that form the crest, the shafts of which incline forward, are black edged with white ; the region of the cheek is white ; a sickle-shaped stripe across the eyes is black, as is also a line commencing at the nape and extending to the tail ; the quills and tail-feathers are dark greyish brown, with light edges. The eye is brown, the beak black, with pale margins, and the feet dirty light blue. The length of the body is five and its breadth eight inches ; the female is somewhat smaller than her mate. The crest of the young birds is not quite so large, and the markings on their head more indistinct.

The Crested Tits are spread over Central Europe and North-western Asia, where they prin-

cipally frequent fir and pine forests, remaining almost throughout the entire year in their native woods, only leaving their shelter for a short time in the spring and autumn. During the winter they associate freely with other species, and in their company fly about in search of food. The song of the male is chirping and insignificant, and during the breeding season is accompanied by a great variety of gesticulation, and a constant display of the crest that adorns his head. The nests are



THE LONG-TAILED TITMOUSE (*Orites caudatus*).

always placed in holes of trees, such as have a narrow entrance being preferred, and are situated at various heights from the ground, in some instances in the deserted dwellings of other birds or of squirrels; the exterior is formed of bits of moss, or some similar material, and lined with hair or wool of various kinds. The eggs, eight to ten in number, are small and delicate, and of snowy white, spotted with rust-red; both parents brood, and the young are hatched within a fortnight, and are reared on small caterpillars. As soon as they are able to support themselves, the old pair at once make preparations for a second family.

Although rare in Great Britain, this species is abundant in all the northern regions of Europe, frequenting places where juniper trees are plentiful; it is common in Germany and the Alpine districts, and is scarce in Holland.

Colonel Montague says, "It is not uncommon amongst the large tracts of pines in the north of Scotland, particularly in the forest of Glenmore, the property of the Duke of Gordon, from whence we have seen it," and Sir William Jardine states that "this bird has been found in some plantations not far distant from Glasgow, where it annually breeds."

It feeds on insects, berries, and the seeds of evergreens, and, according to M. Temminck, builds in holes in trees, or walls.

THE TOUPET TIT.

The TOUPET 'TIT (*Parus bicolor*) is remarkable by the tuft or toupet on its head. In this very pretty bird the sexes are so much alike as to be scarcely distinguishable; both may be described as having the forehead black, the sides of the head brownish black; all the upper surface uniform grey, under surface greyish white, tinged with yellowish brown on the flanks; bill black, irides dark brown, feet lead-colour.

There can be no doubt that the northern regions of America form the true habitat of this species; but as specimens have been undoubtedly killed in Russia, it may be classed among the occasional visitors to the European continent; nevertheless, it is exceedingly rare in Europe, and its presence is confined to the regions adjacent to the Arctic circle. In the works of Wilson and Audubon its manners are described as resembling those of other members of the genus. "It moves along the branches," says the latter, "searches in the chinks, flies to the end of the twigs, and hangs to them by its feet, whilst the bill is engaged in detaching a beech or hazel-nut, an acorn, or a chinquapin, upon all of which it feeds, removing them to a large branch, where, having secured them in a crevice, it holds them by both feet, and breaks the shell by repeated blows of its beak. It resorts to the margins of brooks to drink, and, when unable to do so, obtains water by stooping from the extremity of a twig overhanging the stream. It appears to prefer this latter method, and is also fond of drinking the drops of rain or dew, as they hang at the extremity of the branches." The same author also informs us that its notes, which are usually loud and mellow, are rather unmusical than otherwise; that it is somewhat vicious in its disposition, and occasionally attacks and destroys smaller birds by repeated blows on the head, until it breaks the skull.

The nest is constructed of all kinds of warm materials, and is generally placed in the holes formed by the Downy Woodpecker, or of other Woodpeckers, but it is occasionally placed in a hole dug by the bird itself for that purpose. The eggs, six or eight in number, are pure white, with a few red spots at the larger end.

The WOOD TITS (*Parus*) differ from the species above described by the unusual strength of their conical beak, which is compressed at its sides and pointed at its tip, and by their large, stout claws. The wings, in which the third and fourth quills exceed the rest in length, are short and broad; the tail is long, or of medium size, and either slightly rounded or incised at its extremity. The rich streaming plumage is often brilliantly coloured. The young resemble the mother; little diversity, however, is observable between the sexes.

THE GREAT TIT.

The GREAT TIT (*Parus major*) is olive green on the upper part of its body, and pale yellow beneath; the top of the head, the throat, a stripe that passes along the body, and another extending from the front of the throat to the back of the head, are black; the quills and tail are bluish grey, and the sides of the head and a stripe on the wings white. The eye is dark brown, the beak black, and the foot lead-grey. In the young all the tints are somewhat paler. This species is five inches and

three-quarters long and nine inches broad ; the wing measures two inches and three-quarters, and the tail two inches and a half. The female is a trifle smaller than her mate. This common Tit is found throughout Europe from sixty-five degrees north latitude (in the southern part it is comparatively rarer), and in the whole of Central Asia, and North-western Africa. Unlike the species above described, these birds have no especial predilection for forests, but constantly occupy woods, shrubberies, and gardens, and not unfrequently farm-yards, where they are found to grow very bold in their endeavours to obtain subsistence.

The summer food of the Great Tit consists of insects, together with the buds of trees and fruits, to these it adds the crumbs scattered from the cottage door, of whatever matters they chance to consist, whether animal or vegetable, its digestive powers being apparently adapted to great variety. On the approach of spring it becomes noisy and restless, betaking itself to the top branches of high trees, where it utters its harsh note for the day together ; the note greatly resembles the noise made by filing a saw, or the creaking of a gate on rusty hinges. The song of this bird, which is composed of three distinct notes, would be agreeable were it not for the introduction of occasional harsh grating tones, as they hop nimbly about the branches in search of food. During the breeding season the performance is somewhat more pleasing, and the voice is in many respects not unlike that of the Chaffinch.

"The Great Tit," says Mr. Yarrell, "will frequently kill small birds, accomplishing his purpose by repeated blows with his sharp beak on the skull of the victim, and afterwards picking out and eating the brains. Though more truly a feeder on insects, the Great Tit, unlike insectivorous birds in general, does not migrate, but remains all the year round in the same district, apparently unaffected by the very different temperature of Italy as compared with Russia, and the species is known to be constantly resident in both countries. In England the Great Tit is seldom seen on bleak open ground, but inhabits woods, the vicinity of gardens, or other enclosed and sheltered situations in summer, where it occasionally feeds on small seeds. In winter it approaches nearer the habitations of men, and may be seen in hard weather closely examining the thatch of old buildings in search of the many small flies that harbour there. As the Great Tit is an early breeder, the lively chirping notes of the males are heard early in February ; sometimes this bird produces a sound which has been considered to resemble the noise made in sharpening a saw ; and, though this is small praise, his notes are more remarkable for vivacity and frequent repetition than for quality of tone. The nest, formed of moss and lined with hair and feathers, is usually placed in the hollow of a tree, or a hole in a wall. The deserted nest of a Crow or Magpie is sometimes chosen. Several observers have recorded the partiality so frequently evinced by this species to build its nest in or about any old unused wooden pump, and the mass of materials collected on such occasions wherewith to construct it. The eggs are from six to nine in number, nine lines and a half in length and seven lines in breadth ; white, spotted and speckled with pale red."

"Rusticus," of Godalming, has given an amusing account of the behaviour of one of this species which came under his observation :—"The next object of attention was a Titmouse of the large black-headed kind, swinging himself about like a rope-dancer, and whistling out his sing-song just like a fellow sharpening a saw. To my surprise the gentleman entered an old Magpie's nest, to which I had paid frequent friendly visits during the previous spring ; he immediately came out again and jumped about, sharpening his saw as before. One might almost as well handle a hedgehog as a Magpie's nest ; in this instance some cuttings of gooseberry bushes, skilfully woven into an arch above it, rendered it rather more untempting than usual. I was meditating how to commence the attack, when another Tit flew out in a great choler, and rated me as though I had already robbed her. After a good deal of trouble, during which the slender fir-top was swinging about with me in the

breeze, I succeeded in obtaining a peep into the nest ; there was nest within nest, the cosiest, softest, warmest little nest, with eight delicately speckled eggs at the bottom of the Magpie's more spacious habitation. I declined meddling with them."

THE SOMBRE TIT.

The SOMBRE TIT (*Parus lugubris*).—"This bird," says Mr. Gould, "does not approach the British Islands, nor even the more temperate parts of the European Continent. Its habitat is almost restricted to the European confines of the Asiatic border ; it has, however, never been observed in Austria, or any part of Germany, although pretty common in Dalmatia. The male and female are alike in plumage, and may be thus described:—The whole of the upper surface is of a brownish ash-colour, becoming deeper on the top of the head ; the secondaries and tail-feathers are slightly margined with white ; throat brownish black ; the cheeks and the whole of the under surface white, slightly tinted with brownish grey ; beak and feet lead-colour."

THE COLE TIT.

The COLE TIT (*Parus ater*).—The head, neck, and upper breast are black ; the cheeks and nape white. The length of the bird is four inches and a half, its breadth seven inches. The bill is black, the irides hazel, the legs are lead-grey ; the upper part of the plumage is greyish, the belly yellowish white. The covers of the secondaries and those above are tipped with white, forming two bars across the wing. In the female the white on the cheeks is less extended.

This species is generally spread over the continent of Europe, and is almost as frequent in Great Britain as the Great Tit or the Blue Tit. It has been considered by some naturalists to be identical with the Marsh Tit, but may at once be distinguished from that bird by the white patch on the nape of the neck, and the white spots on the wing-covers, which are not to be found on the Marsh Tit at any age. The Cole Tit frequents woods and plantations, especially those in which oak, birch, and fir trees are numerous, and may be seen in company with other birds of similar habits, roving from tree to tree in search of the small insects and seeds on which they subsist. "In the pine forests of the Dee and Spey," says Macgillivray, "where very few birds are met with, it is pleasant to follow a troop of these tiny creatures, as they search the tree-tops, spreading all round, fluttering and creeping among the branches, ever in motion, now clinging to a twig in an inverted position, now hovering over a tuft of leaves, picking in a crevice of the bark, searching all the boughs, sometimes visiting the lowermost, and again winding among those at the very tops of the trees. In wandering among these woods you are attracted by their shrill, *chirping* notes, which they continually emit as they flutter among the branches." "In woodlands," says Mr. Hepburn, "it is common to see it hopping along the grounds, and uttering its harsh notes, 'If hee !' 'if hee !' It delights to examine a ditch that has just been cleaned out. I have seen it pull small earthworms to pieces and devour them."

"It is a matter of curious inquiry," says Gilbert White, "to trace out how those species of soft-billed birds that continue with us the winter through, subsist during the dead months. The imbecility of birds seems not to be the only reason why they shun the rigour of our winters, for the robust Wry-neck (so much resembling the hardy race of Woodpeckers) migrates, while the feeble little Golden-crested Wren, that shadow of a bird, braves our severest frosts without availing himself of houses or villages, to which most of our birds crowd in distressful seasons, while he keeps aloof in fields and woods ; but perhaps this may be the reason why they often perish, and why they are almost as rare as any bird we know.

"I have no reason to doubt but that the soft-billed birds which winter with us subsist chiefly on

insects in their chrysalis state. All the species of Wagtails in severe weather haunt shallow streams, near their spring-heads, where they never freeze; and, by wading, pick out the chrysalis of the genus of *Phryganæ*.

"Hedge Sparrows frequent sinks and gutters in hard weather, where they pick up crumbs and other sweepings, and in mild weather they procure worms, which are stirring every month in the year, as any one may see that will only be at the trouble of taking a candle to a grass-plot on any mild winter's night. Redbreasts and Wrens in the winter haunt outhouses, stables, and barns, where they find spiders and flies, that have laid themselves up during the cold season. But the grand support of the soft-billed birds in the winter is that infinite profusion of chrysalids of the *Lepidoptera ordo*, which is fastened to the twigs of trees and their trunks, to the poles and walls of gardens and buildings, and is found in every cranny and cleft of rock or rubbish, and even in the ground itself.

"Every species of Titmouse winters with us. They have," continues our author, "what I call an intermediate bill, between the hard and the soft, between the Linnæan genera of *Fringilla* and *Motacilla*. One species alone spends its whole time in the woods and fields, never retreating for succour, in the severest seasons, to houses and neighbourhoods, and that is the delicate Long-tailed Titmouse, which is almost as minute as the Golden-crowned Wren, but the Blue Titmouse or Nun (*Parus cœruleus*), the Cole Mouse (*Parus ater*), the Great Black-headed Titmouse (*Fringillago*), and the Marsh Titmouse (*Parus palustris*), all resort at times to buildings, and in hard weather particularly. The Great Titmouse, driven by stress of weather, much frequents houses, and in deep snows I have seen this bird, while it hung with its back downwards (to my no small delight and admiration) draw straws lengthwise from out the eaves of thatched houses, in order to pull out the flies that were concealed between them, and that in such numbers that they quite defaced the thatch, and gave it a ragged appearance.

"The Blue Titmouse, or Nun, is a great frequenter of houses, and a general devourer. Besides insects, it is very fond of flesh, for it frequently picks bones on dunghills. It is a vast admirer of suet, and haunts butchers' shops. It will also pick holes in apples left on the ground, and be well entertained with the seeds on the head of a sunflower. The Blue Marsh and Great Titmouse will, in very severe weather, carry away barley and oat-straws from the sides of ricks.

"How the Wheat-ear and Whin-chat support themselves in winter cannot be so easily ascertained, since they spend their time on wild heaths and warrens, the former especially where there are stone-quarries. Most probable it is that their maintenance arises from the aurelia of the *Lepidoptera ordo*, which furnish them with a plentiful table in the wilderness."

"That some guess may be formed of the possible extent of good or evil occasioned by small birds," says Bishop Stanley, "we annex the result of our own observations on the precise quantity of food consumed by certain species, either for their own support or that of their young, remarking at the same time that the difference observed in the instances may be partly accounted for by the different quantity of food required by young birds at different periods of their growth.

"Sparrows feed their young thirty-six times in an hour, which, calculating at the rate of fourteen hours a day, in the long days of spring and summer, gives 3,500 times per week, a number corroborated on the authority of another writer, who calculated the number of caterpillars destroyed in a week to be about 3,400.

"Redstarts were observed to feed their young with little green grubs from gooseberry-trees twenty-three times in an hour, which, at the same calculation, amounts to 2,254 times in a week, but more grubs than one were usually imported each time.

"Chaffinches at the rate of about thirty-five times an hour for five or six times together, when

they would pause, and not return for intervals of eight or ten minutes; the food was green caterpillars.

“The Titmouse sixteen times in an hour.

“The comparative weight consumed was as follows :—

“A Greenfinch, provided with eighty grains by weight of wheat, in twenty-four hours consumed seventy-nine; but of a thick paste, made of flour, eggs, &c., it consumed upwards of one hundred grains.

“A Goldfinch consumed about ninety grains of Canary seed in twenty-four hours.



THE GREAT TIT (*Parus major*).

“Sixteen Canaries consumed at the average rate of one hundred grains each in twenty-four hours.

“The consumption of food by these birds, compared with the weight of their bodies, was about one-sixth; which, supposing a man to consume food in the same proportion to his weight, would amount to about twenty-five pounds for every twenty-four hours.”

The nest, which is formed of moss and wool, lined with hair, is placed in a hole in a wall, or the hollow of a tree, or sometimes on the ground, in cavities among the exposed roots, at the mouth of some burrow. The eggs are from six to eight in number, and are white, spotted with pale red.

The BLUE TITS represent a group that have been separated from those mentioned above on account of the unusual shortness of their much-curved beak and the peculiar coloration of their plumage.

THE BLUE TIT.

The BLUE TIT (*Parus caruleus*) is bluish green on the back, and blue on the head, wings, and tail, while the under side is yellow; a white line passes from the brow to the nape, and a narrow bluish black line divides the white cheeks from the dark head; the throat is encircled by a blue band; the quills are slate-black, the hinder ones sky-blue on the outer web and white at the tip; the tail-feathers are greyish blue. The eye is dark brown, the beak black, with white margins, and the foot lead-grey. The female is less beautifully coloured than her mate, and the young somewhat paler. This species is four inches and a half long and seven and a half broad; the wing measures two inches and a third, and the tail about two inches.

The Blue Tits are met with over a greater extent of country than any other member of their family. In Europe they are dispersed over the entire continent, from its most northern latitude to the extreme south; in Northern Africa and Eastern Asia they are replaced by a very similar species. In Great Britain, where they are extremely common, they frequent gardens, groves, or orchards, and have been popularly supposed to do considerable damage by pecking at the buds of fruit trees; it is much more likely, however, that these active little visitants to our orchards, when they seem thus employed, are busily engaged in rendering us an important service, by clearing off the insects and grubs that infest the blossoms sometimes in such large numbers as would seriously injure the crops. "This species," says Mudie, "is perhaps more incessant than any other bird in hunting the buds and branches of trees, especially of fruit trees near houses, for its insect prey; but it will eat any animal matter either in a recent or putrid state, and it appears to scent animal remains at a considerable distance, as it hovers about slaughter-houses, dog-kennels, and other places where there are scraps of carrion. It also haunts the neighbourhood of houses, and picks bones, eats bits of fat, or any refuse it can find, and, when opportunity favours, will even kill other birds by striking them on the head, and then picks their bones as clean as if they were cleared by the thousand inhabitants of an ant-hill. Dead birds are, of course, lawful prize, for which it searches under trees and hedges after severe weather. It is, in short, a very omnivorous bird, and plays the scavenger with equal diligence and grace. It is also very bold and familiar, and will alight among the poultry in the farm-yard or amid the dogs in the kennel; nor does it much heed the presence of people even under the trees upon which it is hunting." So strong is the liking of the Blue Tit for fat, that Gilbert White tells us that he has known as many as twenty caught in one morning with a common snap mouse-trap, baited with tallow or suet.

"When the Blue Tit," says Yarrell, "has taken possession of a hole in a wall or decayed tree, she is not readily induced to quit it, but defends her nest and eggs with great courage and perseverance, puffing out her feathers and hissing like an angry kitten; in some counties, indeed, she goes by the name of 'Billy Biter' among bird-nesting boys, from a vivid remembrance of certain impressions on their fingers. A female that had taken possession of a small wooden box hung up against an out-building, into which she had carried abundance of material for her nest, and in the midst of which she was then sitting upon her numerous eggs, allowed herself to be carried into a house for examination, and when the box was replaced in its former situation, did not desert her eggs, but hatched them and reared her young."

The nest is generally built in a hole in some tree, in many instances excavated by the building birds themselves; and frequent and fierce are the battles that take place between the different couples, relative to the possession of a particularly desirable spot. Within this cavity, a comfortable bed of hair, moss, or feathers is arranged for the reception of the eggs, eight or ten in number, which are white, with spots of rust-red, and about seven lines and a half long, and six in diameter.

Sometimes this bird selects very whimsical situations for a nest. Bishop Stanley, in his "Familiar History of Birds," relates that "A pair of Titmice (*Parus cæruleus*) built their nest in the upper part of an old pump, fixing it on the pin on which the handle worked. It happened that during the time of building and laying the eggs the pump had not been in use; when again set going the female was sitting, and it was naturally supposed that the motion of the pump-handle would drive her away. The young brood were, however, hatched safely, without any other misfortune than the loss of a part of the tail of the sitting bird, which was rubbed off by the friction of the pump-handle. The opening for a pump-handle seems, indeed, to be a favourite spot, notwithstanding its danger, as we knew of another pair of Titmice, who for several days persevered in inserting, close upon the point of the handle, the materials for a nest, though every time the handle was raised they were either crushed or forced out, till the patience of the persevering little builders was fairly exhausted."

In the "Journal of a Naturalist" is the following interesting notice of the Blue Tit:—"I was lately exceedingly pleased in witnessing the maternal care and intelligence of this bird; the poor thing had its young ones in the hole of a wall, and the nest had been nearly all drawn out of the crevice by the paw of a cat, and part of its brood devoured. In re-visiting its home the bird discovered some of its nestlings still alive, though wrapped up and hidden in the tangled moss and feathers of their bed, and it then drew the whole of the nest back into the place from whence it had been taken, unrolled and re-settled the remaining little ones, fed them with the usual attentions, and finally succeeded in rearing them. The parents of even this reduced family laboured with great perseverance to supply the wants of their progeny, one or other of them bringing a grub, caterpillar, or some insect, at intervals of less than a minute during the day, and probably in the earlier part of the morning more frequently. Now if we allow that they brought food to the hole every minute for fourteen hours, and provided for their own wants also, it will admit, perhaps, a total of a thousand grubs a day for the requirements of one, and that a diminished brood, and afford some adequate comprehension of the infinite number requisite for the summer nutriment of our soft-billed birds, and the great distances gone over by such as have young ones, in their numerous trips from hedge to tree in the hours specified when they have full broods to support."

"In winter," says Macgillivray, "the Blue Tit may be occasionally seen about the farm yard, where it finds, when other food fails, a supply of oat or wheat seeds, which it jerks from their husks with its wedge-like bill. It also frequents the doors and dunghills, to pick up a bit of suet, or nibble a morsel of flesh; and where carrion is kept, it is often seen to help itself to a share. Often, at this season too, you may find it clinging to a wall, and digging at the loose plaster, to get at the insects or pupæ concealed behind. It will even make occasional excursions into the stubble near hedges or woods; and, in short, being in a manner omnivorous, it manages to get through the cold part of the year as well as its neighbours. It is accused of attacking other small birds, and splitting their skulls, but I have neither seen it do so, nor met with any other person who has; and we know how, when any assertion of the kind, however incredible, has been made, all the ornithologists catch the cry. It reposes in holes in walls, or among ivy, and seems to suffer less in severe frosts than most birds."

The song of the Blue Tits is a most insignificant performance, and their call-note a single shrill chirp. In other respects, however, they are in no respect inferior to other members of their family. In disposition they are lively, bold, and adventurous, and, were they a little larger, would probably assail enemies twice their own size, at whom they can, as it is, only ruffle up their feathers, and express, by vehement pecks and gesticulations, the pugnacious inclinations they cannot otherwise indulge. During the spring they live in pairs, in the summer in families, and in autumn associate in large flocks before commencing their winter excursions. Naumann tells us that previous to setting forth, these flocks assemble upon the tops of trees, calling incessantly to one another, as

though each wished to induce its companions to set the example by commencing the unwonted flight. One after another rises into the air and makes a start, but finding that the rest have not resolution to follow, at once returns to his former perch, until at last all take flight simultaneously; but even when once fairly off, a mere trifle, such as a hat thrown upwards, will often cause them to drop heavily and precipitately to the ground. This unusual behaviour proceeds from the terror with which they regard the approach of any bird of prey, as they are well aware that in flying over any open country their inferior powers of wing place them completely at the mercy of such assailants. For this reason, when journeying to any distance, the flocks of Blue Tits usually rise to a great height before proceeding on their perilous journey.

THE AZURE TIT.

The AZURE TIT (*Parus cyaneus*) is considerably larger than the last-mentioned species. The upper part of the body is light blue, the head and under side are white, the nape and wings deep blue, the latter adorned with a broad white band, and tipped with white; the eye is dark brown, the beak greyish black, and the foot lead-grey. This species is from five inches and a quarter to six inches long, and nine and a half broad. The Azure Tit is spread over the eastern part of Siberia, and from thence wanders annually over some portions of Europe.

"This beautiful Tit," says Mr. Gould, "is a native of Siberia, whence it frequently strays into the northern parts of Europe, such as Russia and Poland, and it has been known to penetrate as far south as Germany. Like the rest of its family it dwells in woods and forests, generally in the most retired parts; it, therefore, is not to be wondered at that its history is shrouded in obscurity, when we consider how little intercourse naturalists have had with the remote countries that it inhabits. Like the rest of its race, the sexes of the Azure Tit offer little or no difference in the colour of the plumage. Nothing is known respecting nest or eggs."

THE SIBERIAN TIT.

The SIBERIAN TIT (*Parus Sibericus*) is, like the last-mentioned species, an inhabitant of the most northern parts of Europe and Asia. The upper surface of this bird is of a deep ash-colour, tinged on the back with brown; the quills, secondaries, and tail-feathers edged with white; throat black; cheeks and upper part of the chest pure white; under parts greyish white, washed with rufous on the flanks; bill and tarsi lead-colour.

The Siberian Tit is exceedingly rare in Europe. It migrates in winter to some of the provinces of Russia, and has been found in Sweden.

Mr. Lloyd informs us that it is plentiful in Lapland; that the greater portion are stationary all the year round; and that at Mauno, in latitude $68^{\circ} 35'$, it is almost the only bird to be found during the winter.

"The Siberian Titmouse," says M. Malm, "is not only most fearless, but possessed of an extraordinary degree of curiosity, and I have often had the greatest enjoyment in watching its movements. On one occasion I stood for half an hour under a thick spruce pine tree, on the look-out for one of these birds, which I heard chattering in the branches above me, but without being able to get sight of it. At length, however, it left its perch on the top of the tree, and, to my great astonishment, as I was still standing at the foot of the same tree, with the gun under my arm, it descended with the rapidity of an arrow, and took post on the barrel, near the muzzle! Here it remained a long while, and it was not till I had driven it away with my hand that I was enabled to shoot it.

"On another occasion, when out for the purpose of shooting, my gun being charged with large shot, I met with a Siberian Titmouse; and, whilst occupied in changing the shot, it came so very

near me that I was enabled, without difficulty, to knock it down with the ramrod of my gun. This bird makes its nest in a hollow pine tree. The under portion of it consists of moss, which, without any kind of arrangement, is stuffed into the hole. Above this again, is a good portion of the hair of the lemming ; at times, indeed, pieces of the skin of that animal. The eggs, which are from seven to nine in number, are white, and marked with light red spots and blotches. In shape they resemble those of the Common Creeper."

THE MARSH TIT.

The MARSH TIT (*Parus palustris*) is of a reddish grey on the upper part of the body, and greyish white beneath ; the head, as far as the nape, is deep black, the chin greyish black, and the region of the chest white. The eye is dark brown, the beak black, and the foot lead-grey. The body is four inches and a half long, and the span of the wings eight inches ; the wing measures two inches and a half, and the tail two inches.

The Marsh Tit inhabits the central portions of Europe. In the extreme south and north it is replaced by nearly allied species. Everywhere this bird frequents marshy localities, low-lying meadows, and moist woodland districts, preferring clumps of bushes or willows to lofty trees. Such as inhabit Great Britain remain throughout the entire year, but those occupying more northern latitudes wander farther south at the approach of winter.

Mr. Yarrell informs us that the Marsh Tit is common about London, and with the Blue, Cole, Long-tailed, and Great Tits, has been observed in Kensington Gardens, and that these birds are probably attracted to this spot by the insect food to be found about old trees in various stages of decay, a London atmosphere being unfavourable to healthy vegetation.

"The Marsh Tit," he tells us, "from London westward may be traced to Cornwall and Wales." In Ireland, according to Mr. Thompson, this bird has been killed in the Phoenix Park near Dublin, in the county of Kildare, in the vicinity of Belfast, and in the county of Donegal ; from London northward through Essex, Suffolk, Norfolk, and Lincolnshire." It is also abundant in Derbyshire and Yorkshire ; it is found in Durham and Northumberland ; and Mr. Macgillivray saw it near Edinburgh. In his work on "British Birds" he says :—"This species is not nearly so common in the southern districts of Scotland as the Cole Tit, and I am not aware of its having been met with farther north than Fifeshire. Although named the Marsh Tit, it does not confine itself to marshy places, but examines the trees and bushes growing in the driest soil, as well as those of swampy ground ; and I have seen it alight on herbaceous plants, especially thistles. Its flight is rapid and undulated, all its motions are quick and abrupt, and it creeps along the twigs, flutters, and throws itself into all sorts of positions. Its food consists chiefly of insects, but in autumn and winter it also eats the seeds of various syngenesian and other plants, and will pick at the flesh of a dead animal. It remains all the year with us, and does not seem to shift its quarters much. Its ordinary cry is a shrill *cheep*, but it also emits a variety of chattering notes, and in spring has a kind of song, which may be expressed by the syllables 'Chicka, chicka, chee !' Towards the end of the season the little flocks disperse, separate from the individuals of other species with which they have associated in winter, and betake themselves to the dense woods, or to the marshy wooded borders of streams and pools, the chief attraction to which seems to be the decayed willows, of which the crevices afford an abundant supply of insect food."

Montague remarks that "the eggs of all the species of Titmouse whose eggs are known are similar in colour, and only to be distinguished from each other by size and weight. Those of the Nuthatch, Creeper, Wren, Yellow Wren, Wood Wren, and Chiffchaff all agree in their markings, and are so like those of the Titmice that it is scarcely possible to separate them with certainty

if once mixed together. It is somewhat remarkable that all these birds breed in holes, or make a covered nest."

The nest is usually built in hollow trees, the decayed parts of which, as Colonel Montague informs us, it excavates artfully, carrying the chips in its bill to some distance. It always works downwards, and makes the bottom of its excavation, intended for the reception of the nest, larger than the entrance. The nest itself is compactly formed of moss and wool, lined with the soft seed-down of the willow.

The first brood consists of from eight to twelve, and the second of from six to nine eggs. These are seven lines and a half long, and six broad. The shell is white, spotted with red.

THE CAROLINA TITMOUSE.

The CAROLINA TITMOUSE (*Parus Carolinensis*), an American species, has the bill black, the iris dark brown, and the feet bluish grey. The whole upper part of the head and the hind neck are pure black, as is a large patch on the throat and fore neck. Between these patches of black there is a band of greyish white from the base of the bill down the side of the neck, becoming broader and greyer behind. The back and wing-coverts are ash-grey, tinged with brown; quills brown, margined with greyish blue, as is the tail, which is more tinged with grey; lower parts greyish white, tinged with brown; the sides more deeply tinted. The length of this bird is four inches and a half, extent of wings six inches. The female is similar to the male, but somewhat fainter in its tints.

The Carolina Titmouse is a constant inhabitant of the Southern States of North America, extending from the lower parts of Louisiana through the Floridas, as far as the borders of the Roanoke River, reaching eastward as far as the State of New Jersey. In general it is found only in the immediate vicinity of ponds and deep marshy and moist swamps; it is rarely seen during the winter in greater numbers than one pair together, and frequently singly, whereas the Black-cap Titmouse, which this species much resembles, moves in flocks during the whole winter, frequenting orchards, gardens, or the hedges and trees along the roads, entering the villages, and coming to the wood piles of the farmers, whereas the Southern species is never met with in such places at any time of the year, and is at all seasons a shyer bird. The Carolina Titmouse breeds in the holes abandoned by the Brown-headed Nuthatch, but we are as yet not well informed concerning either its eggs or its nest.

THE BLACK-CAP TITMOUSE.

The BLACK-CAP TITMOUSE (*Parus atricapillus*), likewise an American species, has the bill brownish black, the iris dark brown, and the feet greyish blue, as are the claws. The whole upper part of the head and hind neck are pure black, as is a large patch on the throat and fore neck. Between these patches of black is a band of pure white, from the base of the bill down the sides of the neck, becoming broader behind, and encroaching on the back, which, with the wing-coverts, is ash-grey, tinged with brown. The quills are dark greyish brown, margined with bluish white, the secondaries being so broadly margined as to leave a conspicuous white dash on the wing. Tail same as wings, and the feathers similarly edged; lower parts brownish white, the sides pale yellowish brown. Length of body, five inches and a half; length of wing, three inches and seven-eighths. The female is similar to the male.

The opinion generally entertained concerning the extensive range of the Black-cap Titmouse has, in all probability, arisen from its great similarity to the species last described. In reality the Black-cap is rarely observed further south than the middle portions of Maryland; westward of the Alleghanies it extends as far as Kentucky in winter, but at the approach of spring returns northward.

Hardy, smart, restless, industrious, and frugal, the Black-cap Titmouse ranges through the forest during the summer, and retiring to its more secluded parts, as if to ensure a greater degree of quiet, it usually breeds there. Its numerous eggs produce a numerous progeny, and as soon as the first brood has been reared the young range hither and thither in a body, searching for food, while their parents, intent on rearing another family, remain concealed and almost silent, laying their eggs in the hole deserted by some Woodpecker, or forming one for themselves. "As it has been my fortune," says Audubon, "to witness a pair at this work, I will state what occurred, notwithstanding the opinion of those who tell us that the bill of a Titmouse is 'not shaped for digging.' While seated one morning under a crab apple-tree (very hard wood), I saw two Black-cap Titmice fluttering about in great concern, as if anxious to see me depart. By their manners I was induced to believe their nest was near, and, anxious to observe their proceedings, I removed to the distance of about twenty paces. The birds now became silent, alighted on the apple-tree, gradually moved towards the base of one of its large branches, and one of them disappeared, in what I then supposed to be the hole of a small Woodpecker, but I saw it presently on the edge with a small chip in its bill, and again cautiously approached the tree. When three or four yards off I distinctly heard the peckings or tappings of the industrious worker within, and saw it come to the mouth of the hole and return many times in succession in the course of half an hour, after which I got up and examined the mansion. The hole was about three inches deep, and dug obliquely downward from the aperture, which was just large enough to admit the bird. I had observed both sexes at this labour, and left the spot perfectly satisfied as to their power of boring a nest for themselves."

"The Black-cap Titmouse, or Chickadee, as it is generally named in our Eastern States, though exceedingly shy in summer, or during the breeding season, becomes quite familiar in winter, although it never ventures to enter the habitations of man; but in the most boisterous weather requiring neither food nor shelter there, it may be seen amidst the snow, in the rugged paths of the cheerless woods, where it welcomes the traveller or woodcutter with a confidence and cheerfulness far surpassing the well-known familiarity of the Robin Redbreast of Europe. Often, on such occasions, should you offer it, no matter how small a portion of your fare, it alights without hesitation, and devours it without manifesting any apprehension. The sound of an axe in the woods is sufficient to bring forth several of these busy creatures, and, having discovered the woodman, they seem to find pleasure in his company. If, as is usually the case, he is provided with a dinner, the Chickadee at once evinces its anxiety to partake of it, and loses no opportunity of accomplishing its object, although it sets about it with much circumspection, as if afraid of being detected and brought to punishment. "A woodcutter in Maine assured me," continues Audubon, "that one day he happened to be at work, and had scarcely hung up his basket of provisions, when it was observed by a flock of these birds, which, having gathered into it at once, attacked a piece of cold beef; but, after each peck, he saw their heads raised above the edge, as if to guard against the least appearance of danger. After picking until they were tired or satisfied, they left the basket, and perched directly over his fire, but out of the direction of the smoke. There they sat enjoying themselves, and ruffling their feathers, to allow the warmth more easy access to their skin, until he began his dinner, when they alighted near him, and, in the most plaintive tones, seemed to solicit a portion."

"Often," continues our author, "have I watched the busy Chickadees as they proceeded from tree to tree and from branch to branch, whether by the roadside or in the interior of the forest. The light rustling sound of their concave wings would intimate their approach as well as their retreat, as gaily one after another they passed onwards from one spot to another, chattering, peeping everywhere, and determined as it were not to suffer a chink to pass without inspection. Now hanging back downwards at the extremity of a twig, its feet almost up to its bill, one would peck at a berry or a

seed, until it had devoured it, or it had fallen to the ground. Should the latter be the case, the busy bird would at once fly down and hammer at the fruit. To the Black-cap Titmouse the breaking of a hazel-nut is quite a pleasure, and I have repeatedly seen the feat accomplished, not only by a bird in its natural state, but by one kept in confinement. Courageous, and at times exceedingly tyrannical, it will attack young birds, break their skulls, and feed upon their flesh, as I have more than once witnessed.

"The Chickadee feeds on insects, their larvæ and eggs, as well as on every sort of small fruit or berries, including grapes, acorns, and the seeds of various pines. I have seen it eat the seeds of the sunflower, the pokeberry and pears, as well as flesh of all kinds. Indeed, it may truly be called omnivorous. Often you may see them perched, as it were, upon their food, and holding it beneath their feet while pecking it.

"The nest of this species, whether it be placed in the hole of a Woodpecker or Squirrel, or in a place dug by itself, is seldom found at a height exceeding ten feet. Most of those which I have seen were in low, broken, or hollowed stumps, a few feet high. The materials of which it is composed vary in different districts, but are generally the hair of quadrupeds in considerable quantity, and disposed in the shape of a loose bag or purse, as in most other species which do not hang their nests outside." The eggs rarely exceed eight in number; they are five-eighths of an inch long by three-eighths and three-quarters, rather pointed at the smaller end with minute reddish dots and markings. The first brood are laid from the middle of April to that of May, the second two months later. "The flight of this species," says Audubon, "like that of all American Titmice, is short, fluttering generally from tree to tree, and is accompanied with a murmuring sound, produced by the concavity of the wings. It is seldom seen on the ground, unless when it has followed a fruit that has fallen, or when searching for materials for its nest. It usually roosts in its nest during winter, and in summer amid the close foliage of firs or evergreens. In winter indeed, as well as in autumn, it is seen near the farmhouses, and even in villages and towns, busily seeking for food among the trees."

"On seeing a cat, or other object of natural antipathy," says Mr. Nuttall, "the Chickadee, like the peevish Jay, scolds in a loud, angry, and hoarse note, 'tshe! daigh, daigh, daigh!' Among the other notes of this species I have heard a call like 'tshe-de-jay! tshe-de-jay!' the two first syllables being a feeble chirp, with the *jay* strongly pronounced. The only note of this bird which can be called a song, is one which is frequently heard at intervals in the depths of the forest at times of day usually when all other birds are silent. We may then sometimes hear, in the midst of this solitude, two feeble, drawling, clearly whistled and rather melancholy notes, like 'Te dizzy!' and sometimes 'Ye perrit!' and occasionally, but rarely, in the same wiry, whistling, solemn tone, 'Phebe!' On fine days, about the commencement of October, I have heard the Chickadee sometimes for half an hour at a time, attempt a lively petulant warble, very different from his ordinary note. On these occasions he appears to flirt about, still hunting for his prey, in an ecstasy of delight and vigour. But, after awhile, the usual drawling note again occurs."





